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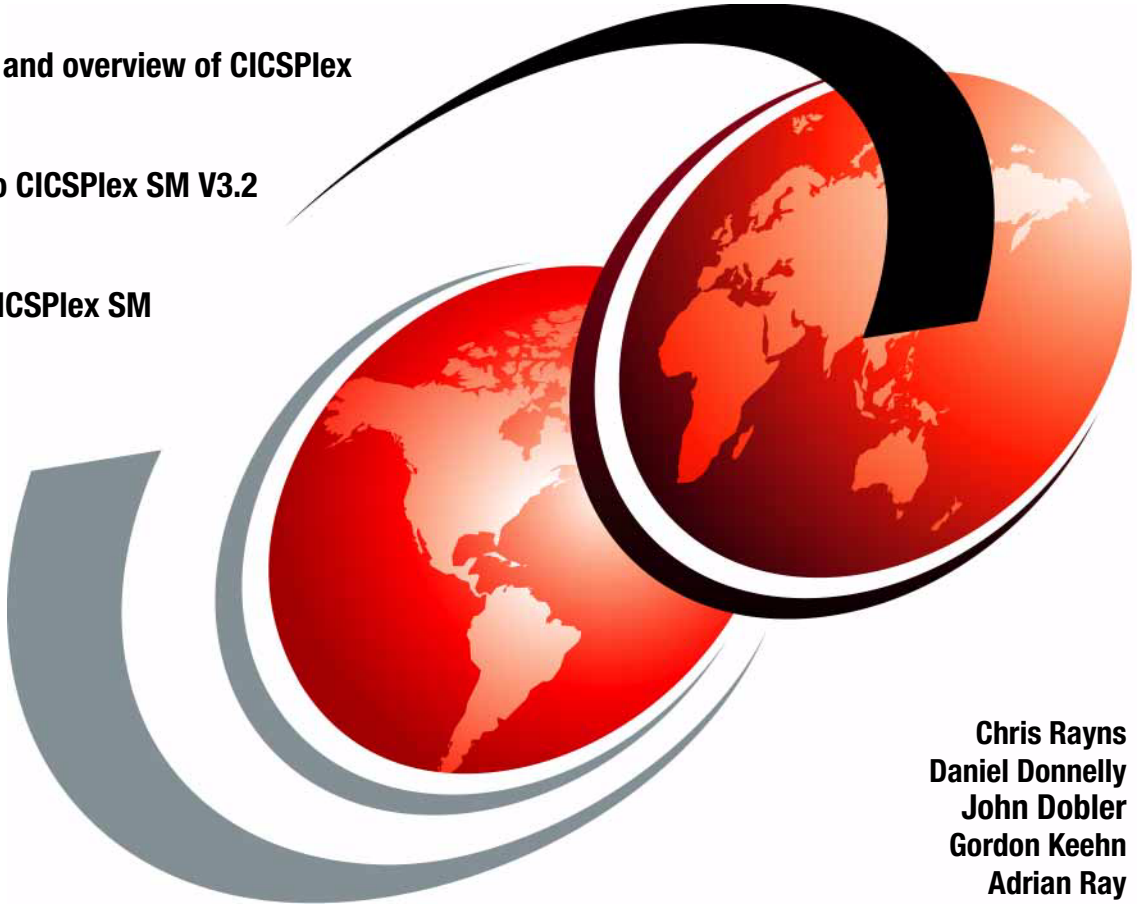
CICS System Manager in the WUI as the Principle Management Interface

- Installation and overview of CICSPlex SM V3.2
- Migration to CICSPlex SM V3.2
- Using the CICSPlex SM WUI



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CICS System Manager in the WUI as the Principle Management Interface

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Note: Before using this information and the product it supports, read the information in “Notices” on page vii.

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Preface

This IBM® Redbooks® publication reviews the CICSPlex® SM Web User Interface (WUI). We first give an overview of CICSPlex SM and the WUI. In Chapter 2, “CICSPlex SM installation” on page 13, we show an installation for first time users of CICSPlex SM and the WUI for CICSPlex SM V3.2. Chapter 3, “CICSPlex SM migration” on page 55, concentrates on how to migrate to CICSPlex SM V3.2. We discuss the migration best practices and show a migration step-by-step.

This book also reviews the default menus delivered with the CICSPlex SM WUI and describes scenarios where these views could be used. We also discuss view modification and customization, focusing on such things as favorites and how to use the view editor.

This book contains a chapter on problem determination. In that chapter we discuss problems that may be discovered and fixed using the CICSPlex SM WUI. Typical problems that we concentrate on are problems with files and in storage, as well as usage of the history facility.

In the final few chapters of this book we look at CICSPlex SM security and describe how to implement SSL in the CICSPlex SM WUI. The last chapter of this book gives the reader some hints and tips on problems encountered, and considerations when using the CICSPlex SM WUI.

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1

CICSPlex SM overview

In this chapter we review the concepts of CICSPlex SM, and we discuss the basic components of the CICSPlex SM Version 3 Release 2 before taking a look at the CICSPlex SM Web User Interface in detail.

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1.1 CICSPlex SM introduction

The CICSPlex System Manager element of CICS Transaction Server for z/OS Version 3 Release 2 (CICSPlex SM) is a system management tool that enables you to manage multiple CICS systems across multiple images from a single control point. Enterprises in which CICSPlex SM may be needed range from those running only a few CICS systems, to those running several hundred (or more) CICS systems. In the latest MVS sysplex environment, having such large numbers of CICS systems to support a transaction-processing workload is becoming an increasing requirement.

Each CICS region to be managed by CICSPlex SM is called a managed application system (MAS). The MASes are defined and managed as part of a CICSplex. Each MAS in a CICSplex is managed by a CICSPlex SM address space (CMAS).

To run the CICSPlex SM component of CICS Transaction Server for z/OS Version 3 Release 2, a MAS may be executing CICS Transaction Server for a z/OS Version 2 Release 2, Version 2 Release 3, Version 3 Release 1, or Version 3 Release 2 system running on an MVS image. However, the CMAS and the WUI server must execute the same release of CICS TS and CICSPlex SM.

The MASes in a CICSplex can be managed by several CMASs, but only one CMAS is defined as the maintenance point (MP) CMAS. This MP CMAS is responsible for keeping the data used by each CMAS synchronized.

CMASs communicate across defined CMAS-to-CMAS links, which are typically used for routing management commands and data between CMASs. The CICSPlex SM Web User Interface (WUI) is now, since CICS Transaction Server for z/OS Version 3 Release 2, the only user interface provided (the MVS/TSO ISPF user interface is no longer provided). The WUI is a server that runs on a dedicated CICSPlex SM local MAS at the same CICS Transaction Server release level as the connected CMAS.

Resource definitions are managed through Business Application Services (BAS). Workload management (WLM), Real Time Analysis (RTA), and monitoring services are used to manage the CICSPlex SM configuration and CICSplex environment and gather statistical information.

All CICSPlex SM components, resources, system management requirements, and the relationships between them are held as objects in a data repository. These objects can be manipulated using the WUI user interface views. The batched repository-update facility is provided for the batched creation of CICSPlex SM resource definitions. Figure 1-1 on page 3 shows an overview of the components in the CICSPlex SM. These are all discussed in 1.2, “Basic CICSPlex SM components” on page 4.

For CICSPlex SM's purposes, a CICSplex is any grouping of CICS systems that you want to manage and manipulate as though they were a single entity. That is, a CICSplex is a management domain made up of those CICS systems for which you want to establish a single system image (SSI). A CICSplex managed by CICSPlex SM could include every CICS system in your enterprise or, alternatively, you could define multiple CICSplexes. Each of these would include a logical grouping of CICS systems. For example, a CICSplex could comprise all CICS systems on a particular MVS image, or all CICS systems accessible by a subset of your users. It could even be all CICS systems serving a particular geographical area. Furthermore, the composition of a CICSplex can be altered without affecting the functions of the underlying CICS systems. The CICS systems in a single CICSplex managed by CICSPlex SM do not have to be explicitly connected to each other for management purposes.

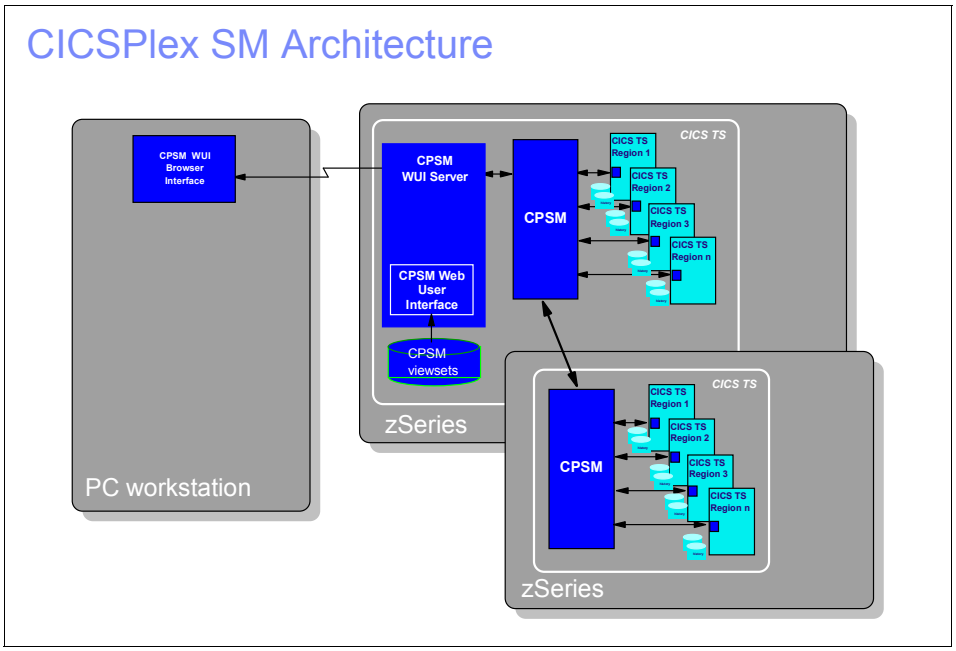

Figure 1-1 CICSPlex SM components

The most significant facts about a CICSplex managed by CICSPlex SM are:

- A CICSplex could be just on a single MVS image or on a sysplex or multiple sysplexes (for example, spanning multiple countries).
- The CICSplex is the largest unit that can be managed from a single point of control. That is, you cannot group CICSplexes and manipulate such a group as a single entity.

- You cannot copy CICSPlex SM data from one CICSplex to another. For system management purposes, the CICSplex is *sealed* against other CICSplexes.
- A CICSPlex SM managed CICS system can only be active in one CICSplex at a time.

CICSPlex SM enables you to define subsets of a CICSplex, which are known as CICS system groups. CICS system groups are not mutually exclusive, and can reference the same CICSPlex SM definitions. Thus, if you decide to include every CICS system in your enterprise in a single CICSplex, there are mechanisms for managing groups of CICS systems within the CICSplex as though each group were a single system. You can assign an unlimited number of CICS systems and CICS system groups to an existing CICSplex. Although you can define a CICS system to only one CICSplex, you can assign a CICS system to multiple CICS system groups within the CICSplex. You can also assign the CICS system group to any number of other CICS system groups.

Important: CICS TS V3.2 requires z/OS (5694-A01) V1.7 or later.

1.2 Basic CICSPlex SM components

Running CICSPlex SM for CICS Transaction Server for z/OS Version 3 Release 2 requires at minimum three dedicated address spaces:

- CICSPlex SM Address Space (CMAS)
- CICSPlex SM Web User Interface (WUI)
- Environment Services System Services (ESSS)

The CMAS and the WUI server are both dedicated CICS regions. They do not run or contain application code, and should be used solely for CICSPlex SM.

A CICS region that becomes part of a CICSplex is known as a Managed Application System (MAS).

Note: We recommend that in a real production environment the WUI server be placed in a CICS region as a dedicated MAS for CICSPlex SM WUI services.

CMAS overview

The CMAS is a CICS region dedicated solely to the CICSPlex SM function. It is responsible for the managing and reporting of all CICS regions and resources within the defined CICSplexes. The CMAS interacts with CICSPlex SM agent code running on each managed CICS region (MAS) to define events and conditions of interest and collect information gathered or to report on as a result of such definitions.

A maintenance point (MP) CMAS is the owner of a CICSplex. When more than one CMAS is involved in managing a CICSplex, then the CMAS that was used to create and define the CICSplex becomes the maintenance point. This is basically the master repository for the CICSplex. For the permanent modification to the environment or repository, the maintenance point CMAS must be available.

Important: The maintenance point for a CICSplex cannot be changed without deleting and redefining the whole plex. Make sure that you know that the CMAS within which you are defining the plex is on the correct one.

The CICSplex topology; BAS, MON, WLM, and RTA definitions; and configurational definitions are all stored in the CMAS repository data set, EYUDREP.

In more complex environments, multiple CMAS regions can communicate between MVS regions to make up CICSplexes. These may consist of CICS regions across a sysplex or located at geographically separate sites.

For simplicity, we only consider a single CMAS for the Web User Interface server and all MAS regions here.

Note: A CMAS region is not part of a managed CICSplex, although it manages one or more CICSplexes.

MAS overview

To be registered as a MAS to CICSPlex SM, a CICS region requires the following to be defined in the startup procedure:

- CICSPlex SM agent load libraries (SEUYLOAD and SEYUAUTH)
- CICSPlex SM parameter defining to which CMAS the CICS will connect to (a DD statement called EYUPARM in the CICS startup procedure)
- DFHSIT parameter denoting the type of CICS connection to be made (CPSMCONN=LMAS)

Note: DFHPLT program EYU9XLCS is now no longer required in the MAS.

The CICSPlex SM agent code is executed during CICS initialization to register the MAS with its respective managing CMAS.

Agent code running on the MAS communicates pertinent statistical and monitoring data back to the CMAS to which it connects.

Note: MASes do not have to run the latest version of CICS code.

The CICSPlex SM Web User Interface server

Traditionally, CICSPlex SM user interaction took place via the MVS/TSO ISPF end user interface (EUI). However, the Web browser-based interface is now the *only* user interface to CICSPlex SM. This requires the use of a second dedicated CICS region known as a Web User Interface (WUI) region. The Web User Interface makes use of CICS Web Services to allow interaction with a Web Browser over TCP/IP. For more information about this see 1.3, “CICSPlex SM Web User Interface” on page 6.

A page of information from the Web User Interface region presented on the browser is known as a *WUI view*. A collection of Web User Interface views is known as a *view set*.

The ESSS

There is one further address space that is automatically created upon startup of the CMAS, called the Environment Services System Services (ESSS). It is a limited function system address space that provides MVS system services to the CICSPlex SM components.

Note: There is one ESSS per CICSPlex SM release per MVS image, that is, you will have multiple ESSSes when migrating to a new release.

1.3 CICSPlex SM Web User Interface

The CICSPlex SM Web User Interface offers an easy-to-use interface that you can use to carry out operational and administrative tasks necessary to monitor and control CICS resources. You can link to the Web User Interface from any location that provides IP network connectivity and firewall security access to a host from a workstation to the WUI server.

1.3.1 CICSPlex SM Web User Interface overview

The WUI is supplied with a set of linked menus and views to facilitate all your system management tasks. See Chapter 4, “CICSPlex SM Web User Interface default menus and views” on page 101.

The WUI can also be customized to reflect your business procedures or to suit the needs of individual users.

The CICSPlex SM Web User Interface allows you to:

- Create clear, uncluttered menus and displays (called views) that present only the information that you wish the user to see.
- Structure your data in a task-oriented way. You can:
  - Organize the user interface by resource category, by user task, or by application.
  - Define the links between views.
  - Define the buttons that will appear on a display and what they will do.
- Customize the layout of data. You can:
  - Have as many views of the same object as you like, each one showing a different selection of data depending on the user task.
  - If you have a Java™-enabled browser, you can use graphical presentations of your data. You can have either a bar gauge that shows, for example, the number of tasks active in a CICS region; or a warning light that can be configured to change color or flash, depending on the threshold values you define for the field.
- Customize the panels to your business needs. You can:
  - Use terminology appropriate to your business.
  - Limit the data that is displayed using filters, so that users see only the data relevant to their task.
  - Include information for the user’s guidance, for example, contact names and telephone numbers.
  - Define text that is written on action buttons.
  - For each menu choice, add explanatory text to help the user in the task.
  - For each view, provide buttons that accomplish a specific task, for example, a shutdown button on a CICS regions view.
- Assign views to a set of favorites for quick and easy access. This allows you to reach frequently used views with just one click. Administrators have the additional authority to update and maintain the favorites of other users.

- Present the data the users want to see in order to complete a task. You can:
  - Create profiles for groups of users. These profiles contain information such as default context, scope, CMAS context, menu, and result set warning count. In this way administrators can configure the WUI in different ways to suit different groups of users in order to present an interface that is more tailored to individual needs.
  - Display only the information you want the user to see.
  - Control what information that can be amended, and where and how these amendments are made. For example, you can make sure that the user has to confirm that an operation is required, or that data has to be changed. You can restrict entry fields to display-only or to preset values.
  - Add safety by providing a confirmation panel asking the user to confirm that an action is to be performed.
  - Set the WUI to issue warnings before it opens a view that will generate a large numbers of records. This improves performance by reducing unnecessary waits.
- Develop menus that guide the user through a task. For each of the tasks being performed in your enterprise, you know which CICSPlex SM objects are involved in the task, and so you can create a menu for the task that contains those objects. In this way, you can create menus that reflect your business procedures.
- Protect the view editor, user editor, and specific menus, views, and help panels from unauthorized access thus protecting the environment.

Note: Browser compatibility that supports HTML V4 is:

- Microsoft® Internet Explorer® 6.0 and 7.0
- Mozilla Firefox 2.0

Further reading

More complex environments may require further background reading, such as *CICSPlex SM for CICS Transaction Server for z/OS, Concepts and Planning,* SC34-6015.

1.3.2 CICS TS V3.2 WUI enhancements

In this section we discuss CICS TS V3.2 WUI enhancements.

Help information

Enhanced, consistent information, with reduced button length and column headings enabling improved window layout. Three levels of help are provided:

- General WUI help
- The CICS Information Center (available if INFOCENTER is coded in the SIT parameter for WUI)
- View specific help

Summary views

These are improved to enable the display of details of summarized records through a new link.

Map support

This is now added as a button facility, allowing the user to explore the associations between administrative resource definitions in an interactive diagrammatic manner. This facility replaces the ISPF Interface MAP function.

Export facility

The COVC transaction that is used for the management of WUI now enables the exporting of the entire WUI repository by means of the addition of the ALL parameter. In addition, new server messages have been introduced for this function.

1.4 CICSPlex SM installation enhancements

Note: The EYUDREP repository defined in the CMAS (not WUI) still remains the primary central repository in the CICSplex.

The CICSPlex SM installation has been simplified by adding the process into that used for CICS. Thus, instead of having to run EYUISTAR as before (which is now no longer available), the CICSPLex SM installation process is now included in DFHISTAR during the CICS upgrade or installation process.

Previously, all definitions that were required to be added manually in the CSD (perhaps by the “UPGRADE USING EYU96xG0” parameter of the utility

DFHCSDUP), are now installed dynamically both at initialization time and when required during run time (actioned by program EYU9XLCD). This applies to the CMAS, WUI, and the CICSplex agents in the MAS regions managed by CICSPlex SM.

The EYU9XDUT utility can now also be used to create definitions required to start a Web User Interface and its associated CICSplex for the first time (having had never been installed before), replacing the TSO end user interface.

CICSPlex SM FMID has been changed to be dependant on the CICS FMID. This allows mutual prerequisites between CICS and CICSPlex SM for PTF management.

Note: It is advisable to define the MP for all managed CICSplexes as a standalone CMAS that does not have any MASes connecting to it. This eases application of maintenance to CICSPlex SM for future upgrades.

See Chapter 3, “CICSPlex SM migration” on page 55, for migration.

1.5 CICSPlex SM enhancements

The following are functional enhancements introduced to CICSPlex SM V3.2:

- New EYU9XDBT utility simplifies the setup (an easy-to-use API command interface) and can be used as an alternative to the BATCHREP facility. It can be used once the basic CMAS environment has already been established.

  Examples are provided in SEUYSAMP as:

  - EYUJXBT0 - JCL syntax for quick reference
  - EYUJXBT1 - sample JCL to define CICSPlex, CICs system group, and a CICS system definition
  - EYUJXBT2 - sample to create a CMAS to CMAS link definition
- Enhancements to WUI views. See Chapter 5, “WUI view modification and customization” on page 177
- Support for dynamic program library management through new LIBRARY, LIBDSN, and LIBDEF resource tables.
- Full functional support for IP interconnectivity for DPL with the new IPCONN and IPCONDEF resource tables.
- Enhancements to TDQ view sets in WUI.
- The CMAS in CICSPlex definitions view is enhanced to display all the CMASs that manage CICSPLEXs for which the context is the MP.

- Improved performance class monitoring information can now be obtained.
- Consideration is now made within a workload algorithm to accommodate workload balancing for dynamic routing over IP connections.
- New attributes have been added to existing views, and related resource tables updated for 64 bit support.
- New views and resource tables have been added to accommodate 64-bit support.

2

CICSPlex SM installation

This chapter describes how to install your CICSPlex SM (CPSM) environment for the first time. We install CICSPlex SM Version 3 Release 2 (CPSM V3.2) into an already existing, previously installed CICS Transaction Server Version 3 Release 2 (CICS TS V3.2) environment. CICS TS V3.2 is a requirement for a CMAS running on CPSM V3.2.

This chapter describes the basic practices for defining your system for first-time users. If you already have CPSM defined and installed on your system, then ignore this chapter, and continue on to Chapter 3, “CICSPlex SM migration” on page 55.

In this chapter we define our CICSplex, CICSPlex SM Address Space (CMAS), and Web User Interface (WUI) to CPSM V3.2. Figure 2-1 on page 14 shows what the CICSPlex SM environment installed will look like after completion of this chapter.

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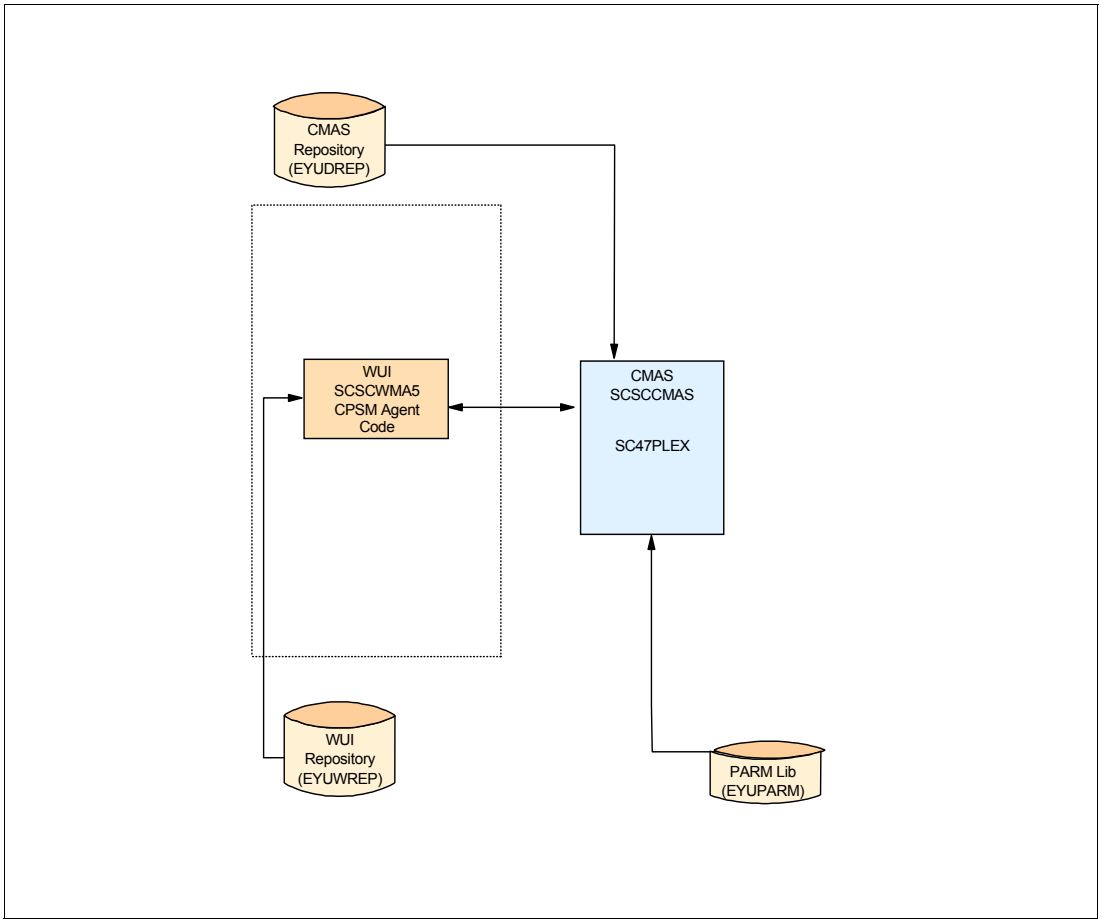

Figure 2-1 New CICSPlex SM installed topology

2.1 Installing CICSPlex SM

This chapter describes the process to follow to install your CICSPlex SM environment.

2.1.1 Pre-installation tasks

You are required to complete some tasks before you start the installation process. For some of these tasks below, you might have to consult your MVS systems programmer or other responsible support groups to either action or confirm completion (some may already have been actioned as part of the CICS TS V3.2 upgrade). Examples of these tasks are:

- Confirm security authorization for all CPSM system libraries and data sets.
- Update the LPA list with SEYULPA.
- APF authorize the following CPSM libraries:
  - SEYUAUTH
  - SEYULINK
  - SEYULPA
- Include the CICSPlex SM library SEYULINK in the MVS link list.
- Review the IEASYS*xx* member in the SYS1.PARMLIB library. It may be required to modify the following two parameters:
  - MAXCAD=nnn

    Each CMAS uses between 6 and 12 common MVS data spaces. Therefore, define the parameter as sufficiently large enough to support your CMAS and any other products that make use of common data spaces facility.

    Note: The number of data spaces stated may impact MVS's auxiliary storage requirement.

  - NSYSLX=nnn

    This is the number of linkage indexes required for CPSM, and is used by ESSS. The minimum requirement for the setting of this parameter would be at least 1.

2.1.2 Installation tasks

Running CPSM V3.2 for CICS TS V3.2 requires, at minimum, three dedicated address spaces:

- CICSPlex SM Address Space (CMAS)
- CICSPlex SM Web User Interface (WUI)
- Environment Services System Services (ESSS)

We define each CMAS and WUI component of our CICSplex and address the installation of each one separately.

We create a new data set called CICSSYSF.CICSTS32.CICS.XDFHINST (your XDFHINST data set could already have been created during the SMPE installation process) with the same attributes as the CICSTS32.CICS.SDFHINST supplied installation data set. We then copy all the members from CICSTS32.CICS.SDFHINST into this PDS.

We then modify the JCL and parameters for member DFHISTAR in library CICSTS32.CICS.SDFHINST. As discussed in the previous chapter, this member incorporates the CICS TS V3.2 and CPSM V3.2 installation process into one.

Example 2-1 shows the DFHISTAR member modified for our environment.

Example 2-1 Modifying DFHISTAR for submission

```
//CICSINST JOB (X),CICSTS32,CLASS=S,MSGCLASS=H,NOTIFY=&SYSUID,
//             REGION=4096K
//* to customize the jobs from the TDFHINST library
//* into the XDFHINST library
//*
//*********************************************************************
//*                                                                   *
//* @BANNER_START                          01                       *
//* Licensed Materials - Property of IBM                              *
//*                                                                   *
//* 5655-M15              DFHISTAR                                    *
//*                                                                   *
//* (C) Copyright IBM Corp. 1991, 2007                                *
//*                                                                   *
//* CICS                                                              *
//* (Element of CICS Transaction Server                               *
//* for z/OS, Version 3 Release 2)                                    *
//* @BANNER_END                                                       *
//*                                                                   *
//* STATUS = 6.5.0                                                    *
//*                                                                   *
//* CHANGE ACTIVITY :                                                 *
//*                                                                   *
```

```
//*                                                                   *
//*   $MOD(DFHISTAR),COMP(INSTALL),PROD(CICS    ):                    *
//*  PN= REASON REL YYMMDD HDXXIII : REMARKS                          *
//* $D1= I07475 640 040712 HD3SCWG : JAVADIR to java142s/J1.4         *
//* $L0= Base   321 91     HD3SCWG : Base                             *
//* $L1= 839    630 021018 HD3SCWG : Add libraries SCEELIB & SCEEBND2 *
//* $L2= 852    640 040813 HD3SCWG : Add SCSQLOAD                      *
//* $L3= 852    640 040918 HD3SCWG : Add SCSQANLE  SCSQCICS  SCSQAUTH *
//* $L4= 869    650 060713 HD3SCWG : Merge CPSM install with CICS     *
//* $L5= 884    650 070205 HD3SCWG : Add SCSFMODO                      *
//* $L6= 884    650 070316 HD3SCWG : Add SIXMEXP                       *
//* $P1= D06664 630 030324 HD3SCWG : JAVADIR to java141s/J1.4         *
//* $P2= D08496 630 030724 HD3SCWG : Add SCEERUN2                      *
//* $P3= D08530 630 030813 HD3SCWG : Add SCEESAMP                      *
//* $P4= D12323 640 041126 HDNONECW: Add 'PATHPREFIX'                  *
//* $P5= D14522 650 050915 HD3SCWG : Default tape unit now 3490        *
//* $P6= D16148 650 060802 HDIADD  : Fix DFHISTAR typos                *
//* $P7= D16687 650 061012 HD4HAPF : DFHISTAR PREFIX default           *
//* $P8= D15893 650 061103 HD3SCWG : Add 'DOWNLOAD' parameter          *
//* $P9= D17990 650 070223 HD3SCWG : Change to comments                *
//*                                                                   *
//*********************************************************************
//DFHISTAR EXEC PGM=IKJEFT01,REGION=2M,DYNAMNBR=99
//SYSPROC  DD DSN=CICSTS32.CICS.SDFHINST,DISP=SHR
//SYSTSPRT DD SYSOUT=*
//SYSTSIN  DD *
  %DFHINST
/*
//IN       DD *
TEMPLIB     CICSTS32.CICS.SDFHINST
LIB         CICSSYSF.CICSTS32.CICS.XDFHINST
*
* If you do not unload RELFILE2 of the CICS Transaction Server 3.2
* tape to library CICSTS32.TDFHINST
*   - change
*            CICSTS32.TDFHINST
*       in the TEMPLIB  parameter and SYSPROC  DD statements above
*       to reflect the library name you used.
*
JOB         //XXXXXXXX JOB accounting-information,etc
JOB         // continuation of JOB statement
JOB         // as required.
*           Add more JOB parameters if you need to.
*
*
*           Do not change the jobname above,
*             leave the jobname as XXXXXXXX
*
*
```

```
*
*
*           The jobname XXXXXXXX will be changed by DFHINST
*             but no other changes will be made to the JOB
*             statement.
*           A TIME parameter will NOT be added. Code a TIME
*             parameter, if necessary, that is large enough
*             to allow all of the installation jobs to complete
*             successfully
*
*
* Change the  SCOPE  parameter below to  SCOPE POST  if you
*   do not require the installation JCL and data to be created
*      - That is, members:
*          DFHISMKD, DFHIHFS0, DFHIHFS1, DFHINST1 through DFHINST6,
*          DFHINSTE, DFHIHFSA, DFHBPXP0, DFHBPXP1 and DFHBPXPA
*
SCOPE       ALL
*
JES         JES2
UTILITIES   ASMA90 IEWL GIMSMP IEBCOPY
PREFIX
* @P7C
DOWNLOAD    CICSTS32.DOWNLOAD
* @P8A
GINDEX      CICSTS32
TINDEX      CICSTS32
DINDEX      CICSTS32
LINDEX      SYS1.CICSTS32
XTRAQUAL    . . .
HFSODSN     OMVS.USR.LPP.CICSTS
HFS1DSN     OMVS.USR.LPP.CICSTS.CICSTS32
HFSADSN     OMVS.USR.LPP.CICSTS.CICSTS32.A
PATHPREFIX
USSDIR      .
USSDIRA     .
JAVADIR     java142s/J1.4
* @D1C
BLKFB80     0
BLKU        32760
BLKISPF     3200
WORKUNIT    SYSALLDA
SMS         NO
DEFVOL      TOTCIL 3390
DISTVOL     TOTCIL 3390
TARGVOL     TOTCIL 3390
SMPVOL      TOTCIL 3390
OPTVOL      TOTCIL 3390
CMACVOL     TOTCIL
```

```
SMPWORK     SYSALLDA
SMPPTS      CICSTS32.SMPPTS
SMPMTS      CICSTS32.SMPMTS
SMPSTS      CICSTS32.SMPSTS
SMPSCDS     CICSTS32.SMPSCDS
SMPLTS      CICSTS32.SMPLTS
GZONELOG    CICSTS32.GZONE.SMPLOG NEW
TZONELOG    CICSTS32.TZONE.SMPLOG NEW
DZONELOG    CICSTS32.DZONE.SMPLOG NEW
GZONECSI    CICSTS32.GZONE NEW CICS32 3390
TZONECSI    CICSTS32.TZONE NEW CICS32 3390
DZONECSI    CICSTS32.DZONE NEW CICS32 3390
GZONE       NEW CICSOPT
TZONE       TZONE
DZONE       DZONE
TAPEUNIT    3490
* @P5C
* MAXIMUM LENGTH OF THE DATASET HIGH-LEVEL QUALIFIER(S)
* ON THE  DSINFO  PARAMETER IS 17
DSINFO      CICSSYSF TOTCIL 3390 .
*
* Additional target zone information
AINDEX      CICSTS32.A
ALINDEX     SYS1.CICSTS32.A
AZONELOG    CICSTS32.A.AZONE.SMPLOG
AZONECSI    CICSTS32.A.AZONE
AZONE       AZONE
ASMPSCDS    CICSTS32.A.SMPSCDS
ASMPMTS     CICSTS32.A.SMPMTS
ASMPSTS     CICSTS32.A.SMPSTS
ASMPLTS     CICSTS32.A.SMPLTS
ADDTVOL     TOTCIL 3390
*
SISPLOAD    SYS1.SISPLOAD
CSSLIB      SYS1.CSSLIB
SCEELKED    CEE.SCEELKED
SCEELIB     CEE.SCEELIB
* @L1A
SCEEBND2    CEE.SCEEBND2
* @L1A
SCEELKEX    CEE.SCEELKEX
SCEEOBJ     CEE.SCEEOBJ
SCEECPP     CEE.SCEECPP
SCLBSID     SYS1.SCLBSID
SEZARPCL    SYS1.SEZARPCL
SEZACMTX    SYS1.SEZACMTX
SCEECICS    CEE.SCEECICS
SCEERUN     CEE.SCEERUN
SCEERUN2    CEE.SCEERUN2
```

```
* @P2A
SCEESAMP    CEE.SCEESAMP
* @P3A
SDSNLOAD    SYS1.SDSNLOAD
SCSQLOAD    SYS1.SCSQLOAD
* @L2A
SCSQANLE    SYS1.SCSQANLE
* @L3A
SCSQCICS    SYS1.SCSQCICS
* @L3A
SCSQAUTH    SYS1.SCSQAUTH
* @L3A
SCSFMODO    SYS1.SCSFMODO
* @L5A
SIXMEXP     SYS1.SIXMEXP
* @L6A
*
*         Strname --Struct avgbufsize--  MVS     Model     Model
*         Suffix  LOG SHUNT   JNL   GEN Sysname  Qual1     Qual2
LOGGER-INFO 001   500  4096 64000  2048  MVSX   XXXXXXXX XXXXXXXX
*
* Start of CPSM specific parameters
CMASNAME SCSCCM47
CMSSYSID CM47
CSYSPLEX SC47PLEX
CSYSYSID SM47
CSYSNAME SCSCSM47
TCPIPHST wtsc47.itso.ibm.com
TCPIPPRT 9000
TIMEZONE B
WUI      YES
WUIPLEX  SC47PLEX
WUISYSID WUI5
WUINAME  SCSCWUI5
OLDDREP  .
NEWDREP-PREFIX .
*
*   End of CPSM specific parameters
*
/*
```

In the previous Example 2-1 on page 16, it is worth noting the following parameters as high lighted:

- TINDEX

  This is determined by the high-level qualifier used in your environment. Typically, it is the SDFHLOAD/SDFHAUTH and SEYULOAD/SEYUAUTH libraries.

- DSINFO

  This is the high-level qualifier used in your environment for the defining of the required system and runtime data sets for your CMAS and WUI.

- CMASNAME

  This is the name allocated to the CMAS. In our case we called the CMAS SCSCCM47.

- CMSSYSID

  This is the connection definition for our SCSCCM47 CMAS. We defined it as CM47. It becomes the SCSCCM47 SYSIDNT SIT parameter.

- CSYSPLEX

  This is the name defined as the CICSplex name, which we defined as *SC47PLEX*.

- CSYSNAME

  This is the name allocated to the MAS (same as CMASNAME). In our case we defined it as SCSCSM47, as this is also used for defining the data sets specific to the MAS. Also, this becomes the APPLID that is generated in the SIT parameter member in our library XDFHINST.

- CSYSYSID

  This is the name defined for the managed CICS system. We defined it as SM47. It becomes the SCSCSM47 SYSIDNT SIT parameter.

- TCPIPHST

  This is the TCP/IP name used to define our SCSCWUI5 CICS to the host system. This parameter is used during the connection process when opening a session for the WUI server.

- TCPIPPRT

  This is the TCP/IP port name used during the connection process when opening a session for the WUI server.

- TIMEZONE

  This is the time zone type specified to the data repository.

- WUI

  This will determine if a WUI CICSplex is to be created or not, but is ignored if the OLDDREP is specified with a value. In our case we wanted to create an environment for the first time, hence we specified YES.

- WUIPLEX

  This is the CICSplex that the WUI is defined to connect to as default, *SC47PLEX* was our choice.

- WUINAME

  This is the name allocated to the WUI, in our case we called the WUI *SCSCWUI5*.

- WUISYSID

  This is the connection definition for our *SCSCWUI5* WUI. We defined it as *WUI5*. This will also become the *SCSCWUI5* **SYSIDNT** SIT parameter.

- OLDDREP

  This is the name of the existing EYUDREP repository, and is used to migrate to the new data respiratory. As our environment is not being migrated, the parameter is ignored

- NEWDREP-PREFIX

  This is the name of the new EYUDREP repository to be used during the migration. As our environment is not being migrated, the parameter is ignored

After submission, the job was completed, and the library CICSSYSF.CICSTS32.CICS.XDFHINST now contains the members required for building a basic CICSplex, CMAS, and WUI.

We now go through the process of creating the environment using the generated jcl members from the CICSSYSF.CICSTS32.CICS.XDFHINST library.

For more information about the installation parameters, see “Installing CICS TS using DFHISTAR” in the CICS Transaction Server for z/OS V3.2 Installation Guide.

2.1.3 Defining the CMAS

This section describes the steps used to create and define our CPSM V3.2 CMAS environment.

Note: The CMAS will check that the current CPSM release level is consistent with that of CICS TS, that is, both must be Version 3 Release 2 and will terminate with a message EYUXL0142 if there are level inconsitancies.

1. Create VTAM application definition (ACB).

   Create a member in SYS1.VTAMLST with the name of APCCMAS. Example 2-2 shows the defining of member APCCMAS in SYS1.VTAMLIST.

   Example 2-2 Defining member APCCMAS in SYS1.VTAMLST

```
VBUILD TYPE=APPL
SCSCCM47 APPL AUTH=(ACQ,VPACE,PASS,SPO),EAS=10,PARSESS=YES,APPC=NO,    X
               ACBNAME=SCSCCM47,VPACING=5,                             X
               SONSCIP=YES
```

   Then add the VTAM configuration list with those members defined in SYS1.VTAMLST to the member ATCCON00. Example 2-3 shows the defining of member APCCMAS to the ATCCON00 member in SYS1.VTAMLST for automatic activation at system startup.

   Example 2-3 Adding the VTAM ACB to ATCCON00

```
APCCMAS,                          SCSCCM47                          X
```

2. Activate the nodes:

   ```
   V NET,ACT,ID=APCCMAS
   ```

   To verify that the major node is active issue the following command:

   ```
   D NET,MAJNODES
   ```

   To verify that the major node is active issue the following command:

   ```
   D NET,E,ID=SCSCCM47
   ```

3. Tailor the member EYUCMSDS with a correct job card. Delete any reference to the creation of a new DFHCSD data set, as we will be using the same DFHCSD data set that was created during the CICS TS V3.2 installation. This member now defines a EYUDREP repository and initializes it. It also defines all the required CICS data sets for the CMAS SCSCCM47.

Note: If you are using SMS you can remove the VOL=SER= parameters from the PDS defines, and the VOLUME parameter from the VSAM defines.

Example 2-4 shows the EYUCMSDS member tailored with the correct definitions.

Example 2-4 The tailored EYUCMSDS member

```
//CICSINST JOB (X),CICSTS32,CLASS=S,MSGCLASS=H,NOTIFY=&SYSUID,
//             REGION=4096K
//*********************************************************************
//*                                                                   *
//*                                                                   *
//*  @BANNER_START                          01                        *
//*  Licensed Materials - Property of IBM                             *
//*                                                                   *
//*  5655-M15              EYUCMSDS                                   *
//*                                                                   *
//*  (C) Copyright IBM Corp. 2006, 2007                               *
//*                                                                   *
//*  CICS                                                             *
//*  (Element of CICS Transaction Server                              *
//*  for z/OS, Version 3 Release 2)                                   *
//*  @BANNER_END                                                      *
//*                                                                   *
//*                                                                   *
//* STATUS = 6.5.0                                                    *
//*                                                                   *
//* CHANGE ACTIVITY :                                                 *
//*                                                                   *
//* $MOD(EYUCMSDS),COMP(CPSM-BLD),PROD(CICS    )                      *
//*                                                                   *
//*  PN= REASON REL YYMMDD HDXXIII : REMARKS                          *
//* $L0= 869    650 060620 HD4HAPF : LID 869 starter regions JCL      *
//* $L1= 869    650 060731 HDJDCH  : MIGRATE CHANGE FROM SPA INTB310  *
//* $L2= 869    650 060831 HDJDCH  : Install changes                  *
//* $P1= D16405 650 060830 HD4HAPF : WUI parameter incorrect          *
//* $P2= D16625 650 061012 HD4HAPF : Auxtrace size for CPSM           *
//* $P3= D17252 650 070126 HD4HAPF : JCL continuation errors          *
//* $P4= D16632 650 070129 HD4HAPF : Rename WUIPARM                   *
//* $P5= D17701 650 070313 HD4HAPF : WUI Server applid and sysid      *
//* $P6= D18879 650 070502 HD4HAPF : DFHLRQ record size change        *
//*                                                                   *
//*********************************************************************
//*
//* Member EYUCMSDS variables modified by DFHISTAR are:
```

```
//* ------------------------------------------------
//* CICSSYSF  - CMAS DSN High Level Qualifier
//* 3390  - Unit for the created data sets
//* TOTCIL   - Volume for the created data sets
//* CICSTS32   - High level target library index
//*  - Additional target library index
//* CEE.SCEESAMP - LE/370 library index
//* B - Time Zone for CICSPlex SM
//* SCSCCM47 - CMAS name and DSN qualifier
//* CM47 - System identifier for the CMAS
//* CICSSYSF.EYUDREP.SCSCCM47  - New CMAS data repository
//* YES - Indicates whether to create definitions for a WUI
//* SC47PLEX  - WUI CICSplex name
//* SCSCWUI5  - WUI name
//* WUI5 - WUI sysid
//*
//* Lines containing a prefix are either edited or deleted
//* depending on various parameters defined to the DFHISTAR run.
//*--------------------------------------------------------------------
//* This job includes the following:
//*   - Create the CICSPlex SM Data Repository for a CMAS.
//*     If the DFHISTAR job specified an existing Data Repository
//*     with the OLDDREP parameter then migrate its contents to
//*     the new Data Repository. If DFHISTAR did not specify
//*     OLDDREP then initialize the Data Repository.
//*
//*   - Create the following CICS data sets for a CMAS
//*       Auxiliary Trace               - DFHAUXT, DFHBUXT
//*       Dump                          - DFHDMPA, DFHDMPB
//*       HTML template                 - DFHHTML
//*       Auxiliary Temporary Storage   - DFHTEMP
//*       Intrapartition Transient Data - DFHINTRA
//*       Local Catalog                 - DFHLCD
//*       Global Catalog                - DFHGCD
//*       Local Request Queue           - DFHLRQ
//*
//*   - Initialize the Local and Global Catalogs for a CMAS
//*
//*   - Create and initialize a CICS CSD
//*
//*--------------------------------------------------------------------
//*
//*--------------------------------------------------------------------
//*
//*       Allocate the Data Repository data set.
//*       Each CMAS must have a separate data repository.
//*
//*--------------------------------------------------------------------
//DELDREP  EXEC PGM=IDCAMS
```

```
//SYSPRINT  DD  SYSOUT=*
//SYSIN     DD  *
 DELETE  CICSSYSF.EYUDREP.SCSCCM47
 SET MAXCC=0
//DEFDREP  EXEC PGM=IDCAMS
//SYSPRINT  DD  SYSOUT=*
//SYSIN     DD  *
 DEFINE  CLUSTER -
   (NAME(CICSSYSF.EYUDREP.SCSCCM47) -
 RECORDS(500,3000) -
 VOLUME(TOTCIL) -
    CISZ(8192) -
   RECSZ(200,6550) -
    KEYS(64,0) -
     SHR(2) -
 INDEXED -
 SPEED -
 REUSE)
/*
//*-------------------------------------------------------------
//*
//*        Initialize a new Data Repository data set
//*
//*-------------------------------------------------------------
//DREPINIT EXEC PGM=EYU9XDUT,
//             COND=(8,LT),
//             PARM=('CMASNAME=SCSCCM47',
//             'DAYLIGHT=N',
//             'TIMEZONE=B',
//             'SYSID=CM47',
//             'ZONEOFFSET=0')
//EYUXDPRM  DD *
 WUI=YES
 WUIPLEX=SC47PLEX
 WUINAME=SCSCWUI5
 WUIAPPLID=SCSCWUI5
 WUISYSID=WUI5
/*
//STEPLIB   DD  DISP=SHR,
//             DSN=CICSTS32.CPSM.SEYUAUTH
//EYUDREP   DD  DISP=OLD,
//             DSN=CICSSYSF.EYUDREP.SCSCCM47
//SYSPRINT  DD  SYSOUT=*
//*
//*
//*-------------------------------------------------------------------
//*  Create the CICS data sets for the CMAS
//*-------------------------------------------------------------------
//*
```

```
//DELREGDS EXEC PGM=IDCAMS
//*-------------------------------------------------------------------
//*  Delete existing CICS data sets for rerun
//*-------------------------------------------------------------------
//SYSPRINT DD  SYSOUT=*
//SYSIN    DD  *
 DELETE CICSSYSF.CPSM.SCSCCM47.DFHAUXT NONVSAM
 DELETE CICSSYSF.CPSM.SCSCCM47.DFHBUXT NONVSAM
 DELETE CICSSYSF.CPSM.SCSCCM47.DFHDMPA NONVSAM
 DELETE CICSSYSF.CPSM.SCSCCM47.DFHDMPB NONVSAM
 DELETE CICSSYSF.CPSM.SCSCCM47.DFHHTML NONVSAM
 DELETE CICSSYSF.CPSM.SCSCCM47.DFHTEMP
 DELETE CICSSYSF.CPSM.SCSCCM47.DFHINTRA
 DELETE CICSSYSF.CPSM.SCSCCM47.DFHLCD
 DELETE CICSSYSF.CPSM.SCSCCM47.DFHGCD
 DELETE CICSSYSF.CPSM.SCSCCM47.DFHLRQ
 SET MAXCC=0
/*
//*-------------------------------------------------------------------
//* Allocate CICS Trace Data Sets DFHAUXT / DFHBUXT
//*-------------------------------------------------------------------
//DEFTRACE EXEC PGM=IEFBR14
//DD1       DD  DISP=(NEW,CATLG,DELETE),
//             SPACE=(CYL,(25)),
//             UNIT=3390,VOL=SER=TOTCIL,
//             DCB=(BLKSIZE=4096,RECFM=F,LRECL=4096),
//             DSN=CICSSYSF.CPSM.SCSCCM47.DFHAUXT
//*
//DD2       DD  DISP=(NEW,CATLG,DELETE),
//             SPACE=(CYL,(25)),
//             UNIT=3390,VOL=SER=TOTCIL,
//             DCB=(BLKSIZE=4096,RECFM=F,LRECL=4096),
//             DSN=CICSSYSF.CPSM.SCSCCM47.DFHBUXT
//*
//DEFHTML  EXEC PGM=IEFBR14
//DD1       DD DISP=(NEW,CATLG,DELETE),
//            SPACE=(CYL,(10,10,100)),
//            UNIT=3390,VOL=SER=TOTCIL,
//            RECFM=FB,
//            LRECL=80,
//            BLKSIZE=0,
//            DSN=CICSSYSF.CPSM.SCSCCM47.DFHHTML
//*
//*-------------------------------------------------------------------
//* Allocate CICS Dump Data Sets DFHDMPA / DFHDMPB
//*-------------------------------------------------------------------
//DEFDMPS  EXEC PGM=IEFBR14,REGION=1024K
//DD1       DD  DISP=(NEW,CATLG,DELETE),
//             SPACE=(CYL,(5)),
```

```
//             UNIT=3390,VOL=SER=TOTCIL,
//             DSN=CICSSYSF.CPSM.SCSCCM47.DFHDMPA
//*
//DD2       DD  DISP=(NEW,CATLG,DELETE),
//             SPACE=(CYL,(5)),
//             UNIT=3390,VOL=SER=TOTCIL,
//             DSN=CICSSYSF.CPSM.SCSCCM47.DFHDMPB
//*-------------------------------------------------------------------
//* Allocate CICS Auxiliary Temp Storage Data Set DFHTEMP
//*-------------------------------------------------------------------
//DEFTSTD  EXEC PGM=IDCAMS
//SYSPRINT  DD  SYSOUT=*
//SYSIN     DD  *
 DEFINE CLUSTER                        -
          (NAME(CICSSYSF.CPSM.SCSCCM47.DFHTEMP) -
          VOLUME(TOTCIL)              -
          NONINDEXED                   -
          REC(200)                     -
          CONTROLINTERVALSIZE(4096)    -
          RECORDSIZE(4089,4089)        -
          SHAREOPTION(2 3))            -
        DATA                           -
          (NAME(CICSSYSF.CPSM.SCSCCM47.DFHTEMP.DATA) -
          UNIQUE)
/*
//*-------------------------------------------------------------------
//* Allocate CICS Intra Transient Data Set DFHINTRA
//*-------------------------------------------------------------------
//DEFINTD  EXEC PGM=IDCAMS
//SYSPRINT  DD  SYSOUT=*
//SYSIN     DD  *
 DEFINE CLUSTER                        -
          (NAME(CICSSYSF.CPSM.SCSCCM47.DFHINTRA) -
          VOLUME(TOTCIL)              -
          NONINDEXED                   -
          REC(100)                     -
          CONTROLINTERVALSIZE(4096)    -
          RECORDSIZE(4089,4089)        -
          SHAREOPTION(2 3))            -
        DATA                           -
          (NAME(CICSSYSF.CPSM.SCSCCM47.DFHINTRA.DATA) -
          UNIQUE)
/*
//*-------------------------------------------------------------------
//* Allocate CICS Local Catalog
//*-------------------------------------------------------------------
//DEFLCD   EXEC PGM=IDCAMS
//SYSPRINT  DD  SYSOUT=*
//SYSIN     DD  *
```

```
 DEFINE CLUSTER                          -
          (NAME(CICSSYSF.CPSM.SCSCCM47.DFHLCD) -
          VOLUME(TOTCIL)               -
          INDEXED                       -
          TRK(5 1)                      -
          REUSE                         -
          FREESPACE(10 10)              -
          SHAREOPTION(2))               -
        DATA                            -
          (NAME(CICSSYSF.CPSM.SCSCCM47.DFHLCD.DATA) -
          KEYS(28 0)                    -
          RECORDSIZE(400 2048)          -
          CONTROLINTERVALSIZE(8192))    -
        INDEX                           -
          (NAME(CICSSYSF.CPSM.SCSCCM47.DFHLCD.INDEX) -
          IMBED                         -
          REPLICATE)
/*
//*-------------------------------------------------------------------
//* Initialize CICS Local Catalog
//*-------------------------------------------------------------------
//INITLCD    EXEC PGM=DFHCCUTL
//STEPLIB     DD DSN=CICSTS32.CICS.SDFHLOAD,DISP=SHR
//SYSPRINT    DD  SYSOUT=*
//SYSUDUMP    DD  SYSOUT=*
//DFHLCD      DD  DISP=SHR,DSN=CICSSYSF.CPSM.SCSCCM47.DFHLCD
//*-------------------------------------------------------------------
//* Allocate CICS Global Catalog
//*-------------------------------------------------------------------
//DEFGCD   EXEC PGM=IDCAMS
//SYSPRINT  DD  SYSOUT=*
//AMSDUMP   DD  SYSOUT=*
//SYSIN     DD  *
 DEFINE CLUSTER                         -
          (NAME(CICSSYSF.CPSM.SCSCCM47.DFHGCD) -
          VOLUME(TOTCIL)              -
          CYL(1 1)                     -
          INDEXED                      -
          FREESPACE(10 10)             -
          REUSE                        -
          SHAREOPTIONS(2))             -
        DATA                           -
          (NAME(CICSSYSF.CPSM.SCSCCM47.DFHGCD.DATA) -
          KEYS(28 0)                   -
          CONTROLINTERVALSIZE(8192))   -
        INDEX                          -
          (NAME(CICSSYSF.CPSM.SCSCCM47.DFHGCD.INDEX) -
          IMBED                        -
          REPLICATE)
```

```
/*
//*-------------------------------------------------------------
//* Initialize CICS Global Catalog
//*-------------------------------------------------------------
//INITGCD  EXEC PGM=DFHRMUTL,REGION=1M
//STEPLIB   DD DSN=CICSTS32.CICS.SDFHLOAD,DISP=SHR
//SYSPRINT  DD  SYSOUT=*
//SYSUDUMP  DD  SYSOUT=*
//DFHGCD    DD  DISP=SHR,DSN=CICSSYSF.CPSM.SCSCCM47.DFHGCD
//SYSIN     DD  *
 SET_AUTO_START=AUTOINIT
/*
//*-------------------------------------------------------------
//* Allocate CICS Local Request Queue
//*-------------------------------------------------------------
//DEFLRQ   EXEC PGM=IDCAMS
//SYSPRINT  DD  SYSOUT=*
//SYSIN     DD  *
 DEFINE CLUSTER                -
          (NAME(CICSSYSF.CPSM.SCSCCM47.DFHLRQ)-
          INDEXED-
          LOG(UNDO)-
          CYL(2 1)-
          VOLUME(TOTCIL)-
          RECORDSIZE( 2232 2400 )-
          KEYS( 40 0 )-
          FREESPACE ( 0 10 )-
          SHAREOPTIONS( 2 3 ))-
        DATA  (NAME(CICSSYSF.CPSM.SCSCCM47.DFHLRQ.DATA)-
          CISZ(2560)) -
        INDEX (NAME(CICSSYSF.CPSM.SCSCCM47.DFHLRQ.INDEX))
/*
//*
```

4. Copy the member EYUCMASP into a procedure library and change the name of the procedure to SCSCCM47. Also, modify as required for your environment.

   Example 2-5 shows the EYUCMASP member copied to a procedure library and renamed to SCSCCM47.

Example 2-5 The tailored SCSCCM47 CMAS member

```
//SCSCCM47 PROC DSNCSD='CICSSYSF.CPSM.SCSCCM47.DFHCSD',
//         RGNHLQ='CICSSYSF.CPSM.SCSCCM47',
//         CICSHLQ='CICSTS32.CICS',
//         CPSMHLQ='CICSTS32.CPSM',
//         PRMLIB='CICSSYSF.CICSTS32.CICS.XDFHINST',
//         CICSPRM=EYUCMSSP,            CICS Parameters
```

```
//         CPSMPRM=EYUCMSOP             CPSM Parameters
//*
//*****************************
//CMAS47   EXEC PGM=EYU9XECS,
//         REGION=OM,
//         TIME=NOLIMIT,
// PARM=('START=&START,SYSIN')
//*****************************
//STEPLIB  DD DISP=SHR,DSN=&CPSMHLQ..SEYUAUTH
//         DD DISP=SHR,DSN=&CICSHLQ..SDFHAUTH
//         DD DISP=SHR,DSN=CEE.SCEERUN2
//         DD DISP=SHR,DSN=CEE.SCEERUN
//*-------------------------------------------------------------------
//* CICS Datasets
//*-------------------------------------------------------------------
//DFHRPL   DD DISP=SHR,DSN=&CPSMHLQ..SEYULOAD
//         DD DISP=SHR,DSN=&CICSHLQ..SDFHLOAD
//         DD DISP=SHR,DSN=CEE.SCEECICS
//         DD DISP=SHR,DSN=CEE.SCEERUN2
//         DD DISP=SHR,DSN=CEE.SCEERUN
//*
//* CICS Parameters
//*
//SYSIN    DD DISP=SHR,
//            DSN=&PRMLIB(&CICSPRM)
//*
//* Intra-Partition VSAM Dataset
//*
//DFHINTRA DD DISP=SHR,DSN=&RGNHLQ..DFHINTRA
//*
//* CICS System Definition Dataset
//*
//DFHCSD   DD DISP=SHR,DSN=&DSNCSD
//*
//* CICS Local Catalog Dataset
//*
//DFHLCD   DD DISP=SHR,DSN=&RGNHLQ..DFHLCD
//*
//* CICS Global Catalog Dataset
//*
//DFHGCD   DD DISP=SHR,DSN=&RGNHLQ..DFHGCD
//*
//* CICS Local Request Queue Dataset
//*
//DFHLRQ   DD DISP=SHR,DSN=&RGNHLQ..DFHLRQ
//*
//* Temp Storage Dataset
//*
//DFHTEMP  DD DISP=SHR,DSN=&RGNHLQ..DFHTEMP
```

```
//*
//* Extrapartion Dataset
//* Created by CICS early in the initialization process.
//* Has destination identifier CXRF
//*
//DFHCXRF  DD SYSOUT=*
//*
//* Extrapartion Data Sets
//*
//LOGUSR   DD SYSOUT=*,DCB=(DSORG=PS,RECFM=V,BLKSIZE=136)
//MSGUSR   DD SYSOUT=*,DCB=(DSORG=PS,RECFM=V,BLKSIZE=136)
//EYULOG   DD SYSOUT=*
//*
//* CICS Dump Datasets
//*
//DFHDMPA  DD DISP=SHR,DSN=&RGNHLQ..DFHDMPA
//DFHDMPB  DD DISP=SHR,DSN=&RGNHLQ..DFHDMPB
//*
//* Auxiliary Trace Dataset
//*
//DFHAUXT  DD DISP=SHR,DSN=&RGNHLQ..DFHAUXT
//DFHBUXT  DD DISP=SHR,DSN=&RGNHLQ..DFHBUXT
//*
//* CPSM Data Repository
//*
//* DO NOT add a DD card or allocate a dataset for EYUDREPN
//*
//EYUDREP  DD DISP=SHR,DSN=CICSSYSF.EYUDREP.SCSCCM47
//*
//* CICSPlex SM Parameters
//*
//EYUPARM  DD DISP=SHR,
//            DSN=&PRMLIB(&CPSMPRM)
//*-------------------------------------------------------------------
```

5. Confirm the system initialization parameters for SCSCCM47.

   Example 2-6 shows the modified system initialization (SIT) parameter in member EYUCMSSP.

Example 2-6 The EYUCMSSP SIT parameters

```
************************************************************************
*                                                                      *
* @BANNER_START                          02                          *
* Licensed Materials - Property of IBM                                 *
*                                                                      *
* "Restricted Materials of IBM"                                        *
*                                                                      *
```

```
* 5655-M15              EYUCMSSP                                        *
*                                                                      *
* (C) Copyright IBM Corp. 2006, 2007                                   *
*                                                                      *
* CICS                                                                 *
* (Element of CICS Transaction Server                                  *
*   for z/OS, Version 3 Release 2)                                     *
* @BANNER_END                                                          *
*                                                                      *
* CHANGE ACTIVITY :                                                    *
*                                                                      *
* $MOD(EYUCMSSP),COMP(CPSM-BLD),PROD(CICS    )                         *
*                                                                      *
*  PN= REASON REL YYMMDD HDXXIII : REMARKS                             *
* $L0= 869    650 060714 HD4HAPF : Merge CPSM install with CICS        *
* $L1= 869    650 070313 HD4HAPF : Changes to EYU9XDBT samples.        *
* $P1= D16169 650 060801 HDIADD  : Fix typo in EYUCMSSP                *
* $P2= D16190 650 060809 HD4HAPF : EYUCMSOP comments wrong             *
* $P3= D16257 650 060811 HD4HAPF : Security overrides                  *
************************************************************************
*  Sample CICS Transaction Server 3.2 (CICS 6.5.0) parameters to
*  initialize a CMAS.
*
* Member EYUCMSSP variables modified by DFHISTAR are:
* ---------------------------------------------------
* SCSCCM47  - CICS name and applid for the CMAS
* CM47  - CICS system identifier for the CMAS
************************************************************************
AIEXIT=DFHZATDX,            VTAM terminal autoinstall program
APPLID=SCSCCM47,           VTAM application id for this CICS
AUTORESETTIME=YES,          Time-of-day synchronization
AUXTR=ON,                   Auxiliary trace - Exception records
AUXTRSW=NEXT,               No continuous auxiliary trace switching
CICSSVC=216,                CICS SVC installed in LPA
CPSMCONN=CMAS,              Connect to CPSM as CMAS
CSDACC=READWRITE,           Enable read and write updates to CSD
CSDRECOV=ALL,               CSD forward recovery and backout
DFLTUSER=CICSUSER,          RACF userid of default user
DSALIM=5M,                  Limit of DSA storage below 16MB
DUMPDS=A,                   Transaction dump data set
DUMPSW=NEXT,                Switch to next transaction dump data set
EDSALIM=100M,               Limit of EDSA storage above 16MB
FCT=NO,                     No File control table
*                           Default logon message
GMTEXT='CICSPlex System Manager - CICS Transaction Server for z/OS',
GRPLIST=DFHLIST,            CSD Group list
ICV=100,                    Region exit interval
ICVR=20000,                 Runaway task interval
ICVTSD=1,                   Terminal scan delay interval
```

```
INTTR=ON,                    Activate main storage trace
IRCSTRT=YES,                 IRC Started at system initialization
ISC=YES,                     Intersystem Communications
MXT=300,                     Maximum tasks to exist
RENTPGM=PROTECT,             ERDSA will be allocated from key 0 storage
SEC=NO,                      Disable external security
SIT=6$,                      System initialization table suffix
SPOOL=YES,                   System spooling interface
START=AUTO,                  Cold start overriding other options
SUBTSKS=1,                   Use additional concurrent mode TCB
SYSIDNT=CM47,          CICS System Id - Must match EYUDREP
SYSTR=OFF,                   Auxiliary trace - No system activity
TCT=NO,                      No TCT needed
TST=NO,                      No TST needed
USERTR=ON,                   Auxiliary trace - Enable user trace
WRKAREA=2048,                Bytes for Common Work Area
* The XCMD, XDCT, XFCT, XJCT, XPCT and XPPT parameters must be set
* to NO for a CMAS
XAPPC=NO,                    RACF checking of APPC sessions
XCMD=NO,                     CMAS must have NO for CICS commands
XDB2=NO,                     RACF checking of DB2
XDCT=NO,                     CMAS must have NO for DCT entries
XEJB=NO,                     RACF checking of security roles
XFCT=NO,                     CMAS must have NO for FCT entries
XJCT=NO,                     CMAS must have NO for JCL entries
XPCT=NO,                     CMAS must have NO for started transactions
XPPT=NO,                     CMAS must have NO for PPT entries
XPSB=NO,                     RACF checking of PSBs
XRF=NO,                      XRF support not generated
XTRAN=NO,                    RACF checking of transaction-attach
XTST=NO,                     RACF checking of TST entries
.END
/*--------------------------------------------------------------------
```

6. Confirm the CPSM EYUPARM parameters for SCSCCM47.Example 2-7 shows the modified CPSM SM initialization parameter (the EYUPARM DD) in member EYUCMS0P.

Example 2-7 The CPSM EYUCMS0P initialization parameter

```
NAME(SCSCCM47)        CMAS Name (Default is APPLID)
```

7. Start the new CMAS procedure using the MVS START command, using a CICS INITIAL start. Subsequent startups should be AUTO or COLD, according to your requirements.Example 2-8 shows the messages from a successful CMAS startup.

Example 2-8 The CMAS startup log

```
+EYUXL0001I SCSCCM47 CMAS PLTPI program starting
+EYUXL0002I SCSCCM47 CICS TRACE active
+EYUXL0017I SCSCCM47 CMAS PLTPI program terminating
+DFHSI1517 SCSCCM47 Control is being given to CICS.
+DFHEJ0102 SCSCCM47 Enterprise Java domain initialization has ended.
+EYUXL0003I SCSCCM47 CPSM Version 320  CMAS startup in progress
+DFHFC0208I SCSCCM47  895
 LSR pool 1 is being built dynamically by CICS because all of the
 necessary parameters have not been supplied. Either there is no
 LSRPOOL definition or it is incomplete. The following are not
 defined:  'CI SIZE' 'STRINGS' 'MAXKEYLENGTH'. A delay is possible.
+EYUXL0022I SCSCCM47 CMAS Phase I initialization complete
+EYUXL0211I SCSCCM47 CPSM Start Up Parameters.
+EYUXL0212I SCSCCM47
************************************************************
+EYUXL0212I SCSCCM47 *
+EYUXL0212I SCSCCM47 * @BANNER_START                          02
+EYUXL0212I SCSCCM47 * Licensed Materials - Property of IBM
+EYUXL0212I SCSCCM47 *
+EYUXL0212I SCSCCM47 * "Restricted Materials of IBM"
+EYUXL0212I SCSCCM47 *
+EYUXL0212I SCSCCM47 * 5655-M15             EYUCMSOP
+EYUXL0212I SCSCCM47 *
+EYUXL0212I SCSCCM47 * (C) Copyright IBM Corp. 1997, 2007
+EYUXL0212I SCSCCM47 *
+EYUXL0212I SCSCCM47 * CICS
+EYUXL0212I SCSCCM47 * (Element of CICS Transaction Server
+EYUXL0212I SCSCCM47 *   for z/OS, Version 3 Release 2)
+EYUXL0212I SCSCCM47 * @BANNER_END
+EYUXL0212I SCSCCM47 *
+EYUXL0212I SCSCCM47 * STATUS = 6.5.0
+EYUXL0212I SCSCCM47 *
+EYUXL0212I SCSCCM47 * CHANGE ACTIVITY :
+EYUXL0212I SCSCCM47 *
+EYUXL0212I SCSCCM47 *  $MOD(EYUCMSOP),COMP(CPSM-BLD),PROD(CICS   ):
+EYUXL0212I SCSCCM47 *
+EYUXL0212I SCSCCM47 *  PN= REASON REL YYMMDD HDXXIII : REMARKS
+EYUXL0212I SCSCCM47 * $L0= Base   110 97     HDZYBB  : Base
+EYUXL0212I SCSCCM47 * $L1= 869    650 060518 HD4HAPF : LID 869 starter
regions
+EYUXL0212I SCSCCM47 * $P1= D16190 650 060809 HD4HAPF : EYUCMSOP comments
wrong
```

```
+EYUXL0212I SCSCCM47 * $P2= D16628 650 070207 HD4HAPF : Defaults added
+EYUXL0212I SCSCCM47 *
+EYUXL0212I SCSCCM47
************************************************************
+EYUXL0212I SCSCCM47 *  Sample CICSPlex SM EYUPARM parameters for a CMAS..
+EYUXL0212I SCSCCM47 *.
+EYUXL0212I SCSCCM47 * Member EYUCMSOP variables modified by DFHISTAR are:.
+EYUXL0212I SCSCCM47 * ------------------------------------------------.
+EYUXL0212I SCSCCM47 * SCSCCM47  - CMAS name.
+EYUXL0212I SCSCCM47
************************************************************
+EYUXL0212I SCSCCM47 NAME(SCSCCM47)       CMAS Name (Default is APPLID).
+EYUXL0212I SCSCCM47
************************************************************
+EYUXL0212I SCSCCM47 * The following parameters are optional..
+EYUXL0212I SCSCCM47 * See the Information Center for more information
about +EYUXL0212I SCSCCM47 *.
+EYUXL0212I SCSCCM47 * ALERTRCVR(NETVALRT)   Name of the generic alert
+EYUXL0212I SCSCCM47 * ALERTVER(0)          Generic alert record version.
+EYUXL0212I SCSCCM47 * APISIGNMSG(YES)      Issue signon/signoff message?.
+EYUXL0212I SCSCCM47 * BASASSOCBLK(14301)    Number of BAS association
blocks +EYUXL0212I SCSCCM47 * COMMTSBLOCKS(512)     Initial number of sets
of control +EYUXL0212I SCSCCM47 ***                      for Communications
Transport +EYUXL0212I SCSCCM47 * JRNLDEFCH(NO)         Write a journal
record for each +EYUXL0212I SCSCCM47 ***                    add, delete
and update operation?.
+EYUXL0212I SCSCCM47 * JRNLOPACT(NO)         Write a journal record for
+EYUXL0212I SCSCCM47 ***                    commands?.
+EYUXL0212I SCSCCM47 * JRNLRTAEV(NO)         Write a journal record each
time +EYUXL0212I SCSCCM47 ***                 is generated?.
+EYUXL0212I SCSCCM47 * MAXAUXCPSM(50)        Percent of auxiliary storage
+EYUXL0212I SCSCCM47 ***                    CMAS.
+EYUXL0212I SCSCCM47 * MAXAUXTOTL(70)        Percent limit of auxiliary
storage
+EYUXL0212I SCSCCM47 * RESSTATUS(NOTIFY)     Response for resource status
+EYUXL0212I SCSCCM47 SEC(NO)                Security check the requests sent
to +EYUXL0212I SCSCCM47 ***                      systems managed by this
CMAS?.
+EYUXL0212I SCSCCM47 * SPOOLCLASS(P)        SYSOUT class for spool output.
+EYUXL0212I SCSCCM47 * TOBATCHREQ(0)         Number of seconds before a
batch +EYUXL0212I SCSCCM47 ***                MAS is timed out.
+EYUXL0212I SCSCCM47 * TOONLINEREQ(0)        Number of seconds before an
online
+EYUXL0212I SCSCCM47 ***                    a MAS is timed out.
+EYUXL0212I SCSCCM47 * TOPOLLINT(300)        Delay in seconds between
checking +EYUXL0212I SCSCCM47 ***                    requests have
exceeded time out +DFHFC0961 SCSCCM47  963
 08/21/2007 16:11:02 SCSCCM47 Calculation of LSR pool 1 parameters
 incomplete. Filename EYUDREPN has no DSNAME.
```

```
+EYUXL0032I SCSCCM47 ESSS connection in progress.
+EYUXL0004I SCSCCM47 ESSS connection complete.
+EYUCR0006W SCSCCM47 Security checking disabled per SEC(NO) EYUPARM
parameter +EYUCW0108I SCSCCM47 Time zone offset from GMT computed based on
967
 TIMEZONE operand in SYS1.PARMLIB(CLOCKxx) or the Sysplex Timer.
+EYUXL0007I SCSCCM47 CMAS Phase II initialization complete.
+EYUXL0007I SCSCCM47 CMAS Phase III initialization complete.
+EYUXL0007I SCSCCM47 CMAS Phase IV initialization complete.
+EYUXL0010I SCSCCM47 CMAS initialization complete.
//*
```

2.1.4 Defining the WUI

This section describes the steps used to create and define our CPSM V3.2 WUI environment.

1. Create the VTAM® application definition (ACB).

   Create a member in SYS1.VTAMLST with the name of APCCWUI. Example 2-9 shows the defining of member APCCWUI in SYS1.VTAMLIST.

   Example 2-9 Defining member APCCWUI in SYS1.VTAMLST

```
VBUILD TYPE=APPL
SCSCWUI5 APPL AUTH=(ACQ,VPACE,PASS,SPO),EAS=10,PARSESS=YES,APPC=NO,    X
               ACBNAME=SCSCWUI5,VPACING=5,                             X
               SONSCIP=YES
```

   We then add the VTAM configuration list with those members defined in SYS1.VTAMLST to the member ATCCON00. Example 2-10 shows the defining of member APCCWUI to the ATCCON00 member in SYS1.VTAMLST for automatic activation at system startup.

   Example 2-10 Adding the VTAM ACB to ATCCON00

```
APCCWUI,                          SCSCWUI5                          X
```

2. Activate the nodes:

   ```
   V NET,ACT,ID=APCCWUI
   ```

   To verify that the major node is active issue the following command:

   ```
   D NET,MAJNODES
   ```

   To verify that the WUI node is active issue the following command:

   ```
   D NET,E,ID=SCSCWUI5
   ```

3. Tailor the member EYUWUIDS (from XDFHINST) with a correct job card. Delete any reference to the creation of a new DFHCSD data set, as we will be

using the same DFHCSD data set that was installed during the CICS TS V3.2 installation and used by the CMAS. This member now defines a EYUWREP repository and initializes it. It also defines all the required CICS data sets for the WUI SCSCWUI5.

Note: If you are using SMS you can remove the VOL=SER= parameters from the PDS defines, and the VOLUME from the VSAM defines.

Example 2-11 shows the EYUWUIDS member tailored with the correct definitions.

Example 2-11 The tailored EYUWUIDS member

```
//CICSINST JOB (X),CICSTS32,CLASS=S,MSGCLASS=H,NOTIFY=&SYSUID,
//             REGION=4096K
//*********************************************************************
//*                                                                   *
//*                                                                   *
//*  @BANNER_START                           01                       *
//*  Licensed Materials - Property of IBM                             *
//*                                                                   *
//*  5655-M15              EYUWUIDS                                   *
//*                                                                   *
//*  (C) Copyright IBM Corp. 2006, 2007                               *
//*                                                                   *
//*  CICS                                                             *
//*  (Element of CICS Transaction Server                              *
//*  for z/OS, Version 3 Release 2)                                   *
//*  @BANNER_END                                                      *
//*                                                                   *
//*                                                                   *
//* STATUS = 6.5.0                                                    *
//*                                                                   *
//* CHANGE ACTIVITY :                                                 *
//*                                                                   *
//* $MOD(EYUWUIDS),COMP(CPSM-BLD),PROD(CICS    )                      *
//*                                                                   *
//*  PN= REASON REL YYMMDD HDXXIII : REMARKS                          *
//* $D1= I07689 650 070328 HD4HAPF : AUTOIMPORT changes               *
//* $L0= 869    650 060620 HD4HAPF : LID 869 starter regions JCL      *
//* $P1= D16625 650 061012 HD4HAPF : Auxtrace size for CPSM           *
//* $P2= D17252 650 070126 HD4HAPF : JCL continuation errors          *
//* $P3= D18879 650 070502 HD4HAPF : DFHLRQ record size change        *
//*                                                                   *
//*********************************************************************
//*
//* Member EYUWUIDS variables modified by DFHISTAR are:
//* ---------------------------------------------------
```

```
//* CICSSYSF  - WUI DSN High Level Qualifier
//* 3390  - Unit for the created data sets
//* TOTCIL   - Volume for the created data sets
//* CICSTS32   - High level target library index
//*  - Additional target library index
//* SCSCWUI5 - WUI name and DSN qualifier
//* CEE.SCEESAMP - LE/370 library index
//*
//* Lines containing a prefix are either edited or deleted
//* depending on various parameters defined to the DFHISTAR run.
//*--------------------------------------------------------------------
//* This job includes the following:
//*   - Create the following CICSPlex SM data sets for a WUI
//*       WUI Repository                - EYUWREP
//*       WUI Import data set           - EYUCOVI
//*       WUI Export data set           - EYUCOVE
//*
//*   - Create the following CICS data sets for a WUI
//*       Auxiliary Trace               - DFHAUXT, DFHBUXT
//*       Dump                          - DFHDMPA, DFHDMPB
//*       HTML template                 - DFHHTML
//*       Auxiliary Temporary Storage   - DFHTEMP
//*       Intrapartition Transient Data - DFHINTRA
//*       Local Catalog                 - DFHLCD
//*       Global Catalog                - DFHGCD
//*       Local Request Queue           - DFHLRQ
//*
//*   - Initialise the Local and Global Catalogs for a WUI
//*
//*   - Optionally create and initialize a CICS CSD
//*
//*--------------------------------------------------------------------
//*
//*--------------------------------------------------------------------
//*
//*       Allocate the WUI Repository data set.
//*       Each WUI must have a separate data repository.
//*
//*--------------------------------------------------------------------
//*********************************************************************
//*                                                                   *
//* @BANNER_START                          01                       *
//* Licensed Materials - Property of IBM                              *
//*                                                                   *
//* 5655-M15             EYUJWREP                                     *
//*                                                                   *
//* (C) Copyright IBM Corp. 1998, 2007                                *
//*                                                                   *
//* CICS                                                              *
```

```
//* (Element of CICS Transaction Server                                *
//* for z/OS, Version 3 Release 2)                                     *
//* @BANNER_END                                                        *
//*                                                                    *
//* STATUS = 6.5.0                                                     *
//*                                                                    *
//* CHANGE ACTIVITY :                                                  *
//*                                                                    *
//* $MOD(EYUJWREP),COMP(CPSM-WUI),PROD(CICS    )                       *
//*                                                                    *
//*  PN= REASON REL YYMMDD HDXXIII : REMARKS                           *
//* $L0= BASE   530 98     HDGIDR  : Port to LCS                       *
//* $L1= 869    650 060706 HD4HAPF : LID 869 starter regions JCL       *
//* $P1= D16174 650 060801 HDIADD  : Fix typo in EYUJWREP              *
//* $P2= D17252 650 070129 HD4HAPF : JCL continuation errors           *
//*                                                                    *
//*********************************************************************
//*--------------------------------------------------------
//*
//*     CICSPlex System Manager Sample WUI Repository JCL
//*     -------------------------------------------------
//*
//*         NAME        : - EYUJWREP
//*         RESOURCE    : - WUI LMAS Required Data Sets
//*
//*         DESCRIPTION : - Deletes/Defines WUI Server Repository
//*                         DATA SET.
//*
//* Member EYUJWREP variables modified by DFHISTAR are:
//* ---------------------------------------------------
//* CICSSYSF  - CMAS DSN High Level Qualifier
//* SCSCWUI5 - WUI name and DSN qualifier
//* TOTCIL   - Volume for the created data sets
//*--------------------------------------------------------
//* Delete Existing WUI Server Repository
//*--------------------------------------------------------
//DELWREP  EXEC PGM=IDCAMS
//SYSPRINT DD SYSOUT=*
//SYSIN    DD *

   DELETE CICSSYSF.CPSM.SCSCWUI5.EYUWREP
   SET MAXCC=0

/*
//*--------------------------------------------------------
//* Define New WUI Server Repository
//*--------------------------------------------------------
//DEFWREP  EXEC PGM=IDCAMS
//SYSPRINT DD SYSOUT=*
```

```
//SYSIN    DD *

   DEFINE CLUSTER (                                -
                   NAME( CICSSYSF.CPSM.SCSCWUI5.EYUWREP ) -
                   VOLUME(TOTCIL)               -
                   STORCLAS( STANDARD )           -
                   RECORDS( 5000 5000 )           -
                   CONTROLINTERVALSIZE( 8192 )    -
                   SPANNED                        -
                   INDEXED                        -
                   SHAREOPTIONS( 2 )              -
                  )                               -
           DATA    (                              -
                   NAME( CICSSYSF.CPSM.SCSCWUI5.EYUWREP.DATA ) -
                   KEYS( 20 20 )                  -
                   RECORDSIZE( 8192 32000 )       -
                  )                               -
           INDEX   (                              -
                   NAME( CICSSYSF.CPSM.SCSCWUI5.EYUWREP.INDEX ) -
                  )
/*
//*
//DELCOVDS EXEC PGM=IDCAMS
//*-------------------------------------------------------------------
//*  Delete existing WUI Import and Export data sets for rerun
//*-------------------------------------------------------------------
//SYSPRINT DD  SYSOUT=*
//SYSIN    DD  *
 DELETE CICSSYSF.CPSM.SCSCWUI5.EYUCOVI NONVSAM
 DELETE CICSSYSF.CPSM.SCSCWUI5.EYUCOVE NONVSAM
 SET MAXCC=0
/*
//*-------------------------------------------------------------------
//* Allocate WUI Import and Export data sets
//*-------------------------------------------------------------------
//DEFCOVDS EXEC PGM=IEFBR14
//DD1       DD  DISP=(NEW,CATLG,DELETE),
//             SPACE=(CYL,(2,2)),
//             UNIT=3390,VOL=SER=TOTCIL,
//             DCB=(DSORG=PS,RECFM=VB,LRECL=32000),
//             DSN=CICSSYSF.CPSM.SCSCWUI5.EYUCOVI
//*
//DD2       DD  DISP=(NEW,CATLG,DELETE),
//             SPACE=(CYL,(2,2)),
//             UNIT=3390,VOL=SER=TOTCIL,
//             DCB=(DSORG=PS,RECFM=VB,LRECL=32000),
//             DSN=CICSSYSF.CPSM.SCSCWUI5.EYUCOVE
//*
//*-------------------------------------------------------------------
```

```
//*  Create the CICS data sets for the WUI
//*--------------------------------------------------------------------
//*
//DELREGDS EXEC PGM=IDCAMS
//*--------------------------------------------------------------------
//*  Delete existing CICS data sets for rerun
//*--------------------------------------------------------------------
//SYSPRINT DD  SYSOUT=*
//SYSIN    DD  *
 DELETE CICSSYSF.CPSM.SCSCWUI5.DFHAUXT NONVSAM
 DELETE CICSSYSF.CPSM.SCSCWUI5.DFHBUXT NONVSAM
 DELETE CICSSYSF.CPSM.SCSCWUI5.DFHDMPA NONVSAM
 DELETE CICSSYSF.CPSM.SCSCWUI5.DFHDMPB NONVSAM
 DELETE CICSSYSF.CPSM.SCSCWUI5.DFHHTML NONVSAM
 DELETE CICSSYSF.CPSM.SCSCWUI5.DFHTEMP
 DELETE CICSSYSF.CPSM.SCSCWUI5.DFHINTRA
 DELETE CICSSYSF.CPSM.SCSCWUI5.DFHLCD
 DELETE CICSSYSF.CPSM.SCSCWUI5.DFHGCD
 DELETE CICSSYSF.CPSM.SCSCWUI5.DFHLRQ
 SET MAXCC=0
/*
//*--------------------------------------------------------------------
//* Allocate CICS Trace Data Sets DFHAUXT / DFHBUXT
//*--------------------------------------------------------------------
//DEFTRACE EXEC PGM=IEFBR14
//DD1       DD  DISP=(NEW,CATLG,DELETE),
//              SPACE=(CYL,(50)),
//              UNIT=3390,VOL=SER=TOTCIL,
//              DCB=(BLKSIZE=4096,RECFM=F,LRECL=4096),
//              DSN=CICSSYSF.CPSM.SCSCWUI5.DFHAUXT
//*
//DD2       DD  DISP=(NEW,CATLG,DELETE),
//              SPACE=(CYL,(50)),
//              UNIT=3390,VOL=SER=TOTCIL,
//              DCB=(BLKSIZE=4096,RECFM=F,LRECL=4096),
//              DSN=CICSSYSF.CPSM.SCSCWUI5.DFHBUXT
//*
//DEFHTML  EXEC PGM=IEFBR14
//DD1       DD DISP=(NEW,CATLG,DELETE),
//             SPACE=(CYL,(10,10,100)),
//             UNIT=3390,VOL=SER=TOTCIL,
//             RECFM=FB,
//             LRECL=80,
//             BLKSIZE=0,
//             DSN=CICSSYSF.CPSM.SCSCWUI5.DFHHTML
//*
//*--------------------------------------------------------------------
//* Allocate CICS Dump Data Sets DFHDMPA / DFHDMPB
//*--------------------------------------------------------------------
```

```
//DEFDMPS  EXEC PGM=IEFBR14,REGION=1024K
//DD1       DD  DISP=(NEW,CATLG,DELETE),
//             SPACE=(CYL,(5)),
//             UNIT=3390,VOL=SER=TOTCIL,
//             DSN=CICSSYSF.CPSM.SCSCWUI5.DFHDMPA
//*
//DD2       DD  DISP=(NEW,CATLG,DELETE),
//             SPACE=(CYL,(5)),
//             UNIT=3390,VOL=SER=TOTCIL,
//             DSN=CICSSYSF.CPSM.SCSCWUI5.DFHDMPB
//*-------------------------------------------------------------------
//* Allocate CICS Auxiliary Temp Storage Data Set DFHTEMP
//*-------------------------------------------------------------------
//DEFTSTD  EXEC PGM=IDCAMS
//SYSPRINT  DD  SYSOUT=*
//SYSIN     DD  *
 DEFINE CLUSTER                        -
          (NAME(CICSSYSF.CPSM.SCSCWUI5.DFHTEMP) -
          VOLUME(TOTCIL)              -
          NONINDEXED                   -
          REC(200,200)                 -
          CONTROLINTERVALSIZE(4096)    -
          RECORDSIZE(4089,4089)        -
          SHAREOPTION(2 3))            -
        DATA                           -
          (NAME(CICSSYSF.CPSM.SCSCWUI5.DFHTEMP.DATA) -
          UNIQUE)
/*
//*-------------------------------------------------------------------
//* Allocate CICS Intra Transient Data Set DFHINTRA
//*-------------------------------------------------------------------
//DEFINTD  EXEC PGM=IDCAMS
//SYSPRINT  DD  SYSOUT=*
//SYSIN     DD  *
 DEFINE CLUSTER                        -
          (NAME(CICSSYSF.CPSM.SCSCWUI5.DFHINTRA) -
          VOLUME(TOTCIL)              -
          NONINDEXED                   -
          REC(100)                     -
          CONTROLINTERVALSIZE(4096)    -
          RECORDSIZE(4089,4089)        -
          SHAREOPTION(2 3))            -
        DATA                           -
          (NAME(CICSSYSF.CPSM.SCSCWUI5.DFHINTRA.DATA) -
          UNIQUE)
/*
//*-------------------------------------------------------------------
//* Allocate CICS Local Catalog
//*-------------------------------------------------------------------
```

```
//DEFLCD   EXEC PGM=IDCAMS
//SYSPRINT  DD  SYSOUT=*
//SYSIN     DD  *
 DEFINE CLUSTER                          -
          (NAME(CICSSYSF.CPSM.SCSCWUI5.DFHLCD) -
          VOLUME(TOTCIL)               -
          INDEXED                       -
          TRK(5 1)                      -
          REUSE                         -
          FREESPACE(10 10)              -
          SHAREOPTION(2))               -
        DATA                            -
          (NAME(CICSSYSF.CPSM.SCSCWUI5.DFHLCD.DATA) -
          KEYS(28 0)                    -
          RECORDSIZE(400 2048)          -
          CONTROLINTERVALSIZE(8192))    -
        INDEX                           -
          (NAME(CICSSYSF.CPSM.SCSCWUI5.DFHLCD.INDEX) -
          IMBED                         -
          REPLICATE)
/*
//*-------------------------------------------------------------------
//* Initialize CICS Local Catalog
//*-------------------------------------------------------------------
//INITLCD    EXEC PGM=DFHCCUTL
//STEPLIB     DD DSN=CICSTS32.CICS.SDFHLOAD,DISP=SHR
//SYSPRINT    DD  SYSOUT=*
//SYSUDUMP    DD  SYSOUT=*
//DFHLCD      DD  DISP=SHR,DSN=CICSSYSF.CPSM.SCSCWUI5.DFHLCD
//*-------------------------------------------------------------------
//* Allocate CICS Global Catalog
//*-------------------------------------------------------------------
//DEFGCD   EXEC PGM=IDCAMS
//SYSPRINT  DD  SYSOUT=*
//AMSDUMP   DD  SYSOUT=*
//SYSIN     DD  *
 DEFINE CLUSTER                         -
          (NAME(CICSSYSF.CPSM.SCSCWUI5.DFHGCD) -
          VOLUME(TOTCIL)              -
          CYL(1 1)                      -
          INDEXED                       -
          FREESPACE(10 10)              -
          REUSE                         -
          SHAREOPTIONS(2))              -
        DATA                            -
          (NAME(CICSSYSF.CPSM.SCSCWUI5.DFHGCD.DATA) -
          KEYS(28 0)                    -
          CONTROLINTERVALSIZE(8192))    -
        INDEX                           -
```

```
          (NAME(CICSSYSF.CPSM.SCSCWUI5.DFHGCD.INDEX) -
          IMBED                          -
          REPLICATE)
/*
//*-------------------------------------------------------------
//* Initialize CICS Global Catalog
//*-------------------------------------------------------------
//INITGCD  EXEC PGM=DFHRMUTL,REGION=1M
//STEPLIB   DD DSN=CICSTS32.CICS.SDFHLOAD,DISP=SHR
//SYSPRINT  DD  SYSOUT=*
//SYSUDUMP  DD  SYSOUT=*
//DFHGCD    DD  DISP=SHR,DSN=CICSSYSF.CPSM.SCSCWUI5.DFHGCD
//SYSIN     DD  *
 SET_AUTO_START=AUTOINIT
/*
//*-------------------------------------------------------------
//* Allocate CICS Local Request Queue
//*-------------------------------------------------------------
//DEFLRQ   EXEC PGM=IDCAMS
//SYSPRINT  DD  SYSOUT=*
//SYSIN     DD  *
 DEFINE CLUSTER                -
          (NAME(CICSSYSF.CPSM.SCSCWUI5.DFHLRQ)-
          INDEXED-
          LOG(UNDO)-
          CYL(2 1)-
          VOLUME(TOTCIL)-
          RECORDSIZE( 2232 2400 )-
          KEYS( 40 0 )-
          FREESPACE ( 0 10 )-
          SHAREOPTIONS( 2 3 ))-
        DATA  (NAME(CICSSYSF.CPSM.SCSCWUI5.DFHLRQ.DATA)-
          CISZ(2560)) -
        INDEX (NAME(CICSSYSF.CPSM.SCSCWUI5.DFHLRQ.INDEX))
/*
//*
```

4. Copy the member EYUWUIP into a procedure library and change the name of the procedure to SCSCWUI5. Also, modify as required for your environment.

   Example 2-12 shows the modified EYUWUIP member copied to a valid procedure library and renamed to SCSCWUI5.

   Example 2-12 The tailored SCSCWUI5 WUI member

```
//SCSCWUI5 PROC DSNCSD='CICSSYSF.CPSM.SCSCWUI5.DFHCSD',
//         RGNHLQ='CICSSYSF.CPSM.SCSCWUI5',
//         CICSHLQ='CICSTS32.CICS',
//         CPSMHLQ='CICSTS32.CPSM',
```

```
//         PRMLIB='CICSSYSF.CICSTS32.CICS.XDFHINST',
//         CICSPRM=EYUWUISP,            CICS Parameters
//         CPSMPRM=EYUWUIOP,            CPSM Parameters
//         WUIPRM=EYUWUIIN              WUI Parameters
//*
//*************************
//WUIPCM47 EXEC PGM=DFHSIP,
//         REGION=OM,
//         TIME=NOLIMIT,
// PARM=('START=&START,SYSIN')
//*************************
//STEPLIB  DD DISP=SHR,DSN=&CPSMHLQ..SEYUAUTH
//         DD DISP=SHR,DSN=&CICSHLQ..SDFHAUTH
//         DD DISP=SHR,DSN=CEE.SCEERUN2
//         DD DISP=SHR,DSN=CEE.SCEERUN
//*-------------------------------------------------------------------
//*        THE CICS LIBRARY (DFHRPL) CONCATENATION
//*-------------------------------------------------------------------
//DFHRPL   DD DISP=SHR,DSN=&CPSMHLQ..SEYULOAD
//         DD DISP=SHR,DSN=&CICSHLQ..SDFHLOAD
//         DD DISP=SHR,DSN=CEE.SCEECICS
//         DD DISP=SHR,DSN=CEE.SCEERUN2
//         DD DISP=SHR,DSN=CEE.SCEERUN
//*
//* CICS Parameters
//*
//SYSIN    DD DISP=SHR,DSN=&PRMLIB(&CICSPRM)
//*
//* Intra-Partition VSAM Dataset
//*
//DFHINTRA DD DISP=SHR,DSN=&RGNHLQ..DFHINTRA
//*
//* CICS System Definition Dataset
//*
//DFHCSD   DD DISP=SHR,DSN=&DSNCSD
//*
//* CICS Local Catalog Dataset
//*
//DFHLCD   DD DISP=SHR,DSN=&RGNHLQ..DFHLCD
//*
//* CICS Global Catalog Dataset
//*
//DFHGCD   DD DISP=SHR,DSN=&RGNHLQ..DFHGCD
//*
//* CICS Local Request Queue Dataset
//*
//DFHLRQ   DD DISP=SHR,DSN=&RGNHLQ..DFHLRQ
//*
//* Temp Storage Dataset
```

```
//*
//DFHTEMP  DD DISP=SHR,DSN=&RGNHLQ..DFHTEMP
//*
//* Extrapartion Data Sets
//*
//DFHCXRF  DD SYSOUT=*
//LOGUSR   DD SYSOUT=*,DCB=(DSORG=PS,RECFM=V,BLKSIZE=136)
//MSGUSR   DD SYSOUT=*,DCB=(DSORG=PS,RECFM=V,BLKSIZE=136)
//EYULOG   DD SYSOUT=*
//*
//* CICS Dump Datasets
//*
//DFHDMPA  DD DISP=SHR,DSN=&RGNHLQ..DFHDMPA
//DFHDMPB  DD DISP=SHR,DSN=&RGNHLQ..DFHDMPB
//*
//* Auxiliary Trace Dataset
//*
//DFHAUXT  DD DISP=SHR,DSN=&RGNHLQ..DFHAUXT
//DFHBUXT  DD DISP=SHR,DSN=&RGNHLQ..DFHBUXT
//*
//* WUI Repository
//*
//EYUWREP  DD DISP=SHR,DSN=&RGNHLQ..EYUWREP
//*
//* CICSPlex SM Parameters
//*
//EYUPARM  DD DISP=SHR, DSN=&PRMLIB(&CPSMPRM)
//*
//* WUI Parameters
//*
//EYUWUI   DD DISP=SHR,DSN=&PRMLIB(&WUIPRM)
//*
//* WUI COVI TDQ for IMPORT
//*
//EYUCOVI  DD DISP=SHR,DSN=&RGNHLQ..EYUCOVI
//*
//* WUI COVE TDQ for EXPORT
//*
//EYUCOVE  DD DISP=SHR,DSN=&RGNHLQ..EYUCOVE
//*
//*--------------------------------------------------------------------
//* End of EYUWUIP Procedure
//*--------------------------------------------------------------------
```

5. Confirm the SIT parameters for SCSCWUI5.

   Example 2-13 shows the SIT parameter (SYSIN DD) in member EYUWUISP.

Example 2-13 The EYUWUISP system initialization parameter

```
************************************************************************
*                                                                      *
* @BANNER_START                          02                        *
* Licensed Materials - Property of IBM                                 *
*                                                                      *
* "Restricted Materials of IBM"                                        *
*                                                                      *
* 5655-M15              EYUWUISP                                       *
*                                                                      *
* (C) Copyright IBM Corp. 2006, 2007                                   *
*                                                                      *
* CICS                                                                 *
* (Element of CICS Transaction Server                                  *
*   for z/OS, Version 3 Release 2)                                     *
* @BANNER_END                                                          *
*                                                                      *
* STATUS = 6.5.0                                                       *
*                                                                      *
* CHANGE ACTIVITY :                                                    *
*                                                                      *
* $MOD(EYUWUISP),COMP(CPSM-BLD),PROD(CICS    )                         *
*                                                                      *
*  PN= REASON REL YYMMDD HDXXIII : REMARKS                             *
* $LO= 869    650 060714 HD4HAPF : Merge CPSM install with CICS        *
* $P1= D16175 650 060801 HDIADD  : Typo in EYULMSSP and EYUWUISP       *
* $P2= D16190 650 060810 HD4HAPF : EYUCMSOP comments wrong             *
* $P3= D16257 650 060811 HD4HAPF : Security overrides                  *
* $P4= D16629 650 070206 HD4HAPF : WUI SIT parms                       *
*                                                                      *
*  Sample CICS SIT overrides to initialize a WUI.
*
* Member EYUWUISP variables modified by DFHISTAR are:
* -------------------------------------------------
* SCSCWUI5  - WUI name and applid
* WUI5  - Unit for the created data sets
************************************************************************
AIEXIT=DFHZATDX,            VTAM terminal autoinstall program
APPLID=SCSCWUI5,            VTAM application id for this CICS
AUTORESETTIME=YES,          Time-of-day synchronization
AUXTR=ON,                   Auxiliary trace - Exception records
AUXTRSW=NEXT,               No continuous auxiliary trace switching
CICSSVC=216,                CICS SVC installed in LPA
CPSMCONN=WUI,               Connect to CPSM as a WUI
CWAKEY=CICS,                Storage key for CWA
```

```
DFLTUSER=CICSUSER,          RACF userid of default user
DSALIM=6M,                  Limit of DSA storage below 16MB
DTRPGM=EYU9XLOP,            Dynamic routing program
DUMPDS=A,                   Transaction dump data set
DUMPSW=NEXT,                Switch to next transaction dump data set
EDSALIM=100M,               Limit of EDSA storage above 16MB
FCT=NO,                     No File control table
*                           Default logon message
GMTEXT='CICSPlex System Manager - CICS Transaction Server for z/OS',
GRPLIST=DFHLIST,            Group list
ICV=100,                    Region exit interval
ICVR=5000,                  Runaway task interval
ICVTSD=1,                   Terminal scan delay interval
INITPARM=(EYU9VWAN='ENU1',EYU9VKEC='ENU')
INTTR=ON,                   Activate main storage trace
IRCSTRT=YES,                IRC Started at system initialization
ISC=YES,                    Intersystem Communications
MCT=2$,                     Monitoring control table suffix
MN=ON,                      Switch monitoring on or off
MNPER=ON,                   Switch performance monitoring on or off
MNFREQ=001500,              Performance monitoring frequency
MXT=120,                    Maximum tasks
SEC=NO,                     Disable external security
SIT=6$,                     System initialization table suffix
SPOOL=YES,                  System spooling interface
START=AUTO,                 Cold start overriding other options
SYSIDNT=WUI5,               CICS System Id
SYSTR=OFF,                  Auxiliary trace - No system activity
TCT=NO,                     No TCT needed
TS=(COLD,3),                Cold start temporary storage
TST=NO,                     No TST needed
USERTR=ON,                  Auxiliary trace - Enable user trace
WRKAREA=2048,               Bytes for Common Work Area
TCPIP=YES,                  Activate CICS TCPIP services
XAPPC=NO,                   RACF checking of APPC sessions
XCMD=NO,                    RACF checking of EXEC CICS system commands
XDB2=NO,                    RACF checking of DB2 resources
XDCT=NO,                    RACF checking of DCT entries
XEJB=NO,                    RACF checking of security roles
XFCT=NO,                    RACF checking of FCT entries
XJCT=NO,                    RACF checking of JCT entries
XPCT=NO,                    RACF checking of EXEC-started transactions
XPPT=NO,                    RACF checking of PPT entries
XPSB=NO,                    RACF checking of PSBs
XRF=NO,                     XRF support not generated
XTRAN=NO,                   RACF checking of transaction-attach
XTST=NO,                    RACF checking of TST entries
.END
```

6. Confirm the CPSM EYUWUI parameters for SCSCWUI5. We added the TCPIPADDRESS parameter to access the WUI from the Web browser by using HTTP and not HTTPS.

   Example 2-14 shows the CPSM initialization parameter (EYUPARM DD) in member EYUWUIIN.

   Example 2-14 The CPSM EYUWUI initialization parameter

```
TCPIPHOSTNAME(WTSC47.ITSO.IBM.COM)  TCP/IP host name of this WUI Server
TCPIPADDRESS(9.12.6.84)
TCPIPPORT(9000)      TCP/IP port number
DEFAULTCMASCTXT(SCSCCM47) CMAS context - CMAS name
DEFAULTCONTEXT(SC47PLEX)  Context - CICSplex name
DEFAULTSCOPE(SC47PLEX)    Scope - CICSplex, CICS group or MAS name
AUTOIMPORTDSN(CICSTS32.CPSM.SEYUVIEW)
AUTOIMPORTMEM(EYUEA*)      Import the English menus and view sets
```

7. Start the new WUI procedure using the MVS START command, using a CICS INITIAL start. Subsequent startups should be AUTO or COLD, according to your requirements.

   Example 2-15 shows the messages from a successful CMAS startup.

   Example 2-15 The WUI startup log

```
+EYUXL0030I SCSCWUI5 ESSS connection in progress to CICSPLEX(SC47PLEX) for
SYSID(CM47).
+EYUXL0004I SCSCWUI5 ESSS connection complete.
+EYUCL0006I SCSCWUI5 ESSS link to SCSCCM47 established.
+EYUXL0007I SCSCWUI5 LMAS Phase II initialization complete.
+EYUNL0099I SCSCWUI5 LMAS LRT initialization complete.
```

8. The import of the WUI views starts automatically on startup of SCSCWUI5. This was defined in the EYUWUIIN parameter defined in Example 2-14, and need only be included in the first startup of the WUI region. For subsequent startups, it can be omitted.

```
AUTOIMPORTDSN(CICSTS32.CPSM.SEYUVIEW)
AUTOIMPORTMEM(EYUEA*)
```

   Example 2-16 shows the messages from a successful CMAS startup.

   Example 2-16 The WUI eyulog confirmation of the import

```
EYUVS1064I SCSCWUI5 Import completed successfully. 285 objects read from
data data set (CICSTS32.CPSM.SEYUVIEW)
EYUVS1064I SCSCWUI5  member (EYUEA*).
EYUVS0002I SCSCWUI5 CICSPlex SM Web User Interface initialization complete.
EYUVS0010I SCSCWUI5 Server connected to CMAS, SYSID(CM47).
```

2.2 Connecting to the WUI

This section describes the process to follow to connect and sign on to the CICSPLex SM WUI interface.

2.2.1 Accessing the WUI

We open a Web browser session and use the parameters TCPIPADDRESS and TCPIPPORT as defined in the member EYUWIIN (EYUWUI DD statement in SCSCWUI5 WUI CICS region) from our CICSSYSF.CICSTS32.CICS.XDFHINST data set.

```
TCPIPADDRESS(9.12.6.84)
TCPIPPORT(9000)
```

The command is entered as:

```
http://9.12.6.84:9000/CICSPlexsm
```

Figure 2-2 shows the http command as entered in a Web browser window.

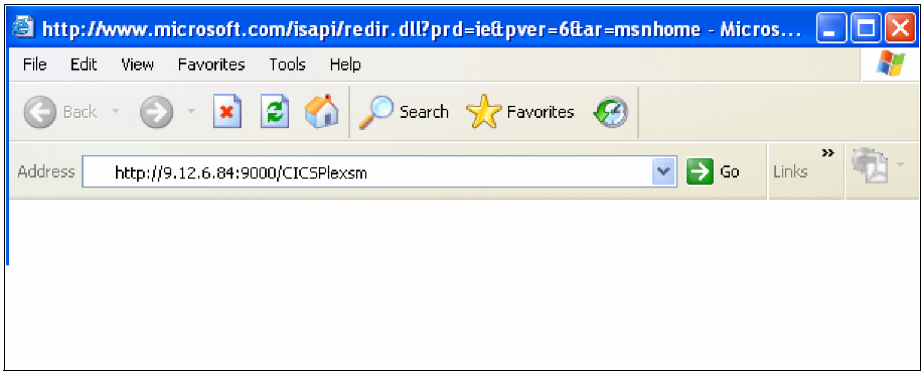

Figure 2-2 HTTP command as entered to connect to WUI Server

This opens a Web page for the WUI CICS SCSCWUI5. Click **Begin Signon** to continue.

Figure 2-3 shows the panel to prompt signon.

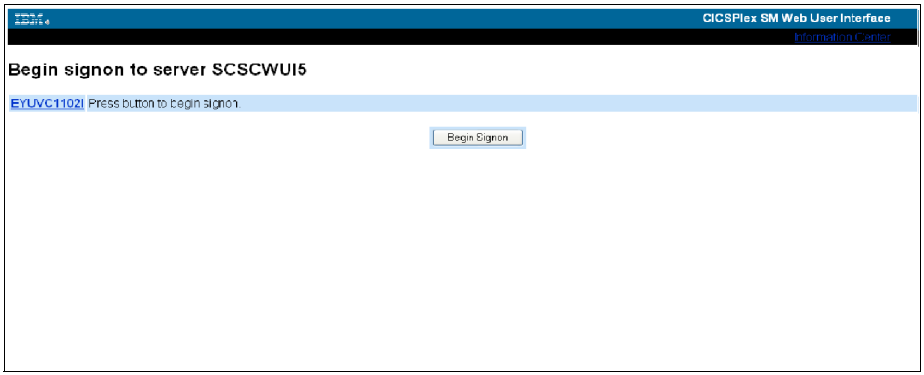

Figure 2-3 The result of entering the HTTP command

Figure 2-4 prompts for a valid user ID to sign on.

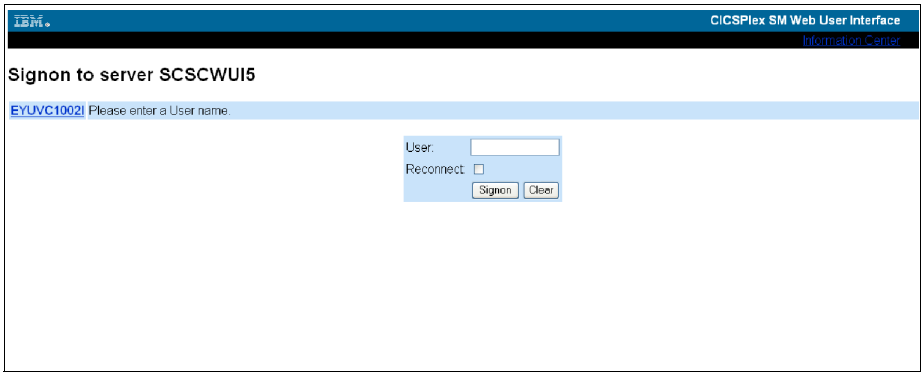

Figure 2-4 Signon prompt window for WUI Server

The following window displays the first menu, the Main Menu. Notice the following default filters:

- CMAS context: the name of the CMAS SCSCCM47, as defined (DEFAULTCMASCTXT)in member EYUWUIIN in CICSSYSF.CICSTS32.CICS.XDFHINST, referenced by the EYUWUI DD statement in the SCSCWUI5 procedure
- Context: the name of the CICSplex SC47PLEX, as defined (DEFAULTCONTEXT) in member EYUWUIIN in CICSSYSF.CICSTS32.CICS.XDFHINST, referenced by the EYUWUI DD statement in the SCSCWUI5 procedure

- Scope: the name of the CICSplex SC47PLEX, as defined (DEFAULTSCOPE)in member EYUWUIIN in CICSSYSF.CICSTS32.CICS.XDFHINST, referenced by EYUWUI DD statement in the SCSCWUI5 procedure

Figure 2-5 shows the CICSPlex SM Main Menu window.

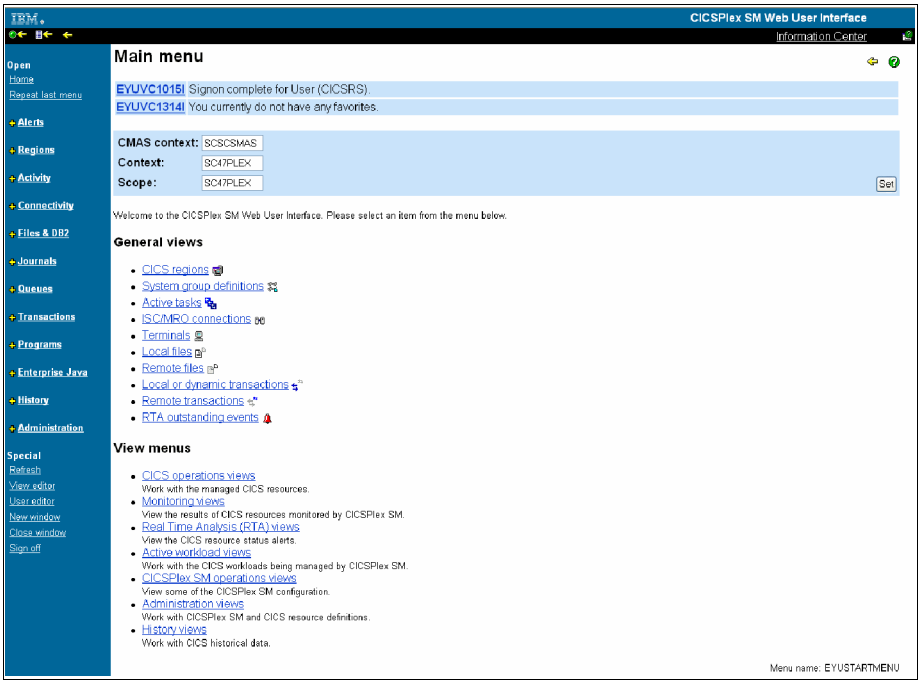

Figure 2-5 CICSPlex SM WUI main menu

2.2.2 Important things to remember

The following information is important:

- INACTIVETIMEOUT

  The default for this parameter is 30 minutes, so once an individual user's Web User Interface session has been inactive for 30 minutes, the inactive user sessions are terminated. This might cause problems if, for example, the user was in the middle of creating a view or favorite, as everything that has been done and not saved will be lost.

- MAXUSERS

  The maximum number of users allowed to log on to a WUI server is controlled by the MAXUSERS WUI initialization parameter. The default value is 20

users, and the maximum value allowed is 50 users. If your maximum number of WUI users is approaching the maximum allowed in CICSPlex SM V3.2, consider setting up multiple WUI servers to avoid performance constraints. To determine the number of user sessions currently assigned, use option 4 of the COVC transaction, User Sessions panel.

- ESSS

  Environment Service System Services (ESSS) is a limited-function z/OS system address space that provides z/OS services to CICSPlex SM components. See 3.1.3, “ESSS and multiple CICSPlex SM levels” on page 59.

3

CICSPlex SM migration

This chapter describes how to migrate your CICSPlex SM (CPSM) environment. In this book we migrate from CICSPlex SM Version 3 Release 1 (CPSM V3.1) to CPSM Version 3 Release 2 (CPSM V3.2).

This chapter describes some best practices when migrating your system and also discusses handling a multiple-release CICSPlex SM environment.

On completion of this chapter you will have completed a full migration of your CICSPlex SM environment.

In this chapter we migrate our CICSPlex SM Address Space (CMAS), Web User Interface (WUI), and one local Managed Address Spaces (MAS) to CICSPlex SM V3.2. Figure 3-1 on page 56 shows the CICSPlex SM environment migrated in this book. The Coordinating Address Space (CAS) is not migrated and is not supported for CPSM V3.2.

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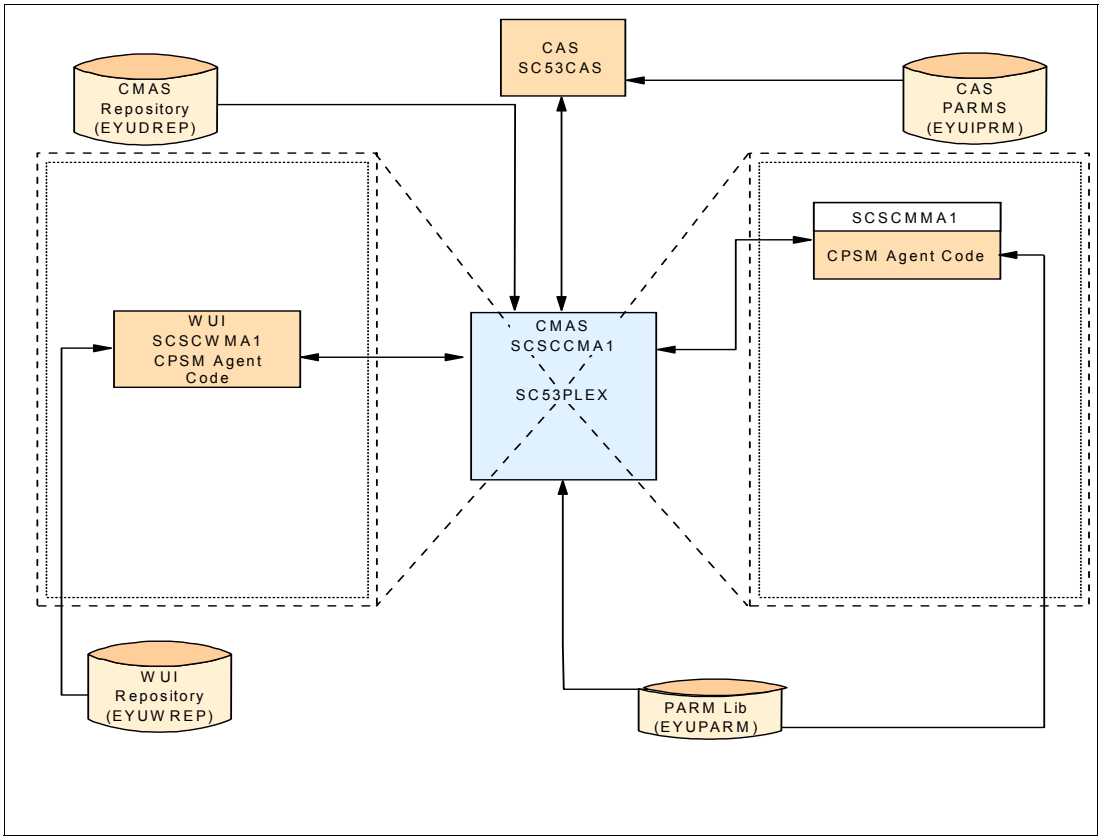

Figure 3-1 Existing CICSPlex setup

3.1 Best practices when migrating CICSPlex SM

This section describes some best practices when migrating your CICSPlex SM system. It also describes how you can run different versions of CICSPlex SM concurrently.

In this chapter we describe migrating from CICSPlex SM V3.1 to CICSPlex SM V3.2. When discussing specific versions of CICS and CICSPlex SM, the following terminology is used:

CPSM V3.2	CICSPlex SM Version3 Release 2
CPSM V3.1	CICSPlex SM Version3 Release 1
CPSM V2.3	CICSPlex SM Version 2 Release 3
CPSM V2.2	CICSPlex SM Version 2 Release 2
TS V3.2	CICS Transactions Server for z/OS Version 3 Release 2
TS V3.1	CICS Transactions Server for z/OS Version 3 Release 1
TS V2.3	CICS Transaction Server for z/OS Version 2 Release 3
TS V2.2	CICS Transaction Server for z/OS Version 2 Release 2

3.1.1 Running CICSPlex SM V3.2 with earlier releases concurrently

MASes running these CICS releases can be directly connected to CPSM V3.2:

- TS V3.1
- TS V2.3
- TS V2.2

To enable a phased migration to a CPSM V3.2 environment, CPSM V3.1, CPSM V2.3, and CPSM V2.2 can run at the same time, with interconnected CMASs. However, a CPSM V3.2 CMAS and CPSM V3.2 WUI can only run in a CICS system at the same release level.

These conditions apply to environments in which CICSPlex SM V3.2 and earlier releases of CICSPlex SM are running concurrently.

Note: The APAR information listed here is correct at the time of publication. Refer to the *CICS Transaction Server for z/OS Program Directory* and review the latest available PSP information for recent changes.

The following conditions apply to environments in which CPSM V3.2 and earlier releases of CPSM are running concurrently:

- If you intend to use TS V2.2 with TS V3.2, you must install APAR PQ65168, PTF UQ71534 to that release.

- In order for a CMAS and a MAS (including those MASs that act as WUIservers) to communicate, they must all be running the same release of CPSM That is, a MAS (including those MASs that act as WUI servers) must be connected to a CMAS running at the same release of CPSM as the MAS.
- A CMAS running at Version 3.2 can be connected to a CMAS running at Version 3.1, Version 2.3, or Version 2.2. However:
  - In a CICSplex that consists of CMASs at the Version 3.2 level and the Version 3.1, Version 2.3, or Version 2.2 level, the maintenance point CMAS must be at the Version 3.2 level. That is, when a CICSplex contains CMASs at more than one level, the first CMAS converted to Version 3.2 must be the maintenance point.
  - If you are using the API or Web User Interface to manage MASs connected to a CMAS at an earlier release, you must ensure that the MASs are managed indirectly from the Version 3.2 CMAS.
    - All API programs run so that they are connected to the CPSM V3.2 CMAS.

      Note: This is only required if the API program needs to access new fields or later level CICS systems. If the API program connects to a lower-level CMAS, any resource tables that contain new or updated fields for the new release would not be returned to the API program connected to the lower release level CMAS.

    - All Web User Interface servers connect to the Version 3.2 CMAS.
  - You cannot view resources of a CICS Version 3.2 region using a CMAS running at an earlier release.
- The following definitions, if required, must be created using a WUI server or EUI running at the same CICSPlex SM release level as the maintenance point CMAS:
  - CPLEXDEF
  - CMTCMDEF
  - CSYSGRP
  - PERIODEF
  - MONSPEC
  - MONGROUP
  - MONDEF
  - RTAGROUP
  - RTADEF
  - WLMSPEC
  - WLMGROUP
  - WLMDEF

– TRANGRP

CICSPlex SM and the maintenance point CMAS release level must, again, be at the same release level if you use the API or BATCHREP to create these definitions.

3.1.2 Migration rules to consider

Here are some basic rules to consider when planning a phased CPSM migration:

- A WUI can only connect to a CMAS that is at the same CPSM release level.
- A CPSM V3.1 WUI can retrieve data from a MAS connected to a CPSM V3.2 CMAS (assuming that it is not a resource type that is unknown to TS 3.1) if the CMAS participates in the management of the CICSplex.
- A CPSM V2.3 WUI can retrieve data from a MAS connected to a CPSM V3.2 CMAS (assuming that it is not a resource type that is unknown to TS 2.3) if the CMAS participates in the management of the CICSplex.
- A CPSM V2.2 WUI can retrieve data from a MAS connected to a CPSM V3.2 CMAS (assuming that it is not a resource type that is unknown to TS 2.2) if the CMAS participates in the management of the CICSplex.
- A CPSM V3.2 WUI can retrieve data from any MAS connected to any CMAS if the CMAS participates in the management of the CICSplex.

3.1.3 ESSS and multiple CICSPlex SM levels

Environment Service System Services (ESSS) is a limited-function z/OS system address space that provides z/OS services to CICSPlex SM components. In particular, ESSS owns all of the CICSPlex SM z/OS data spaces in an LPAR, so that they can exist independently of all CMASs and MASs, yet remain accessible by both. The benefit is that CICSPlex SM data accumulating in the data spaces is not vulnerable to events in the MAS and CMAS components.

There is one instance of an ESSS on any LPAR on which one or more CMASs are installed for the same CPSM release. If there are CMASs at different CPSM release levels on the same LPAR, one ESSS will exist per CPSM SM release. The ESSS is started automatically by the first CMAS to start on an LPAR. The ESSS address space are named EYUXvrm, for example, EYUX320.

3.1.4 Maximum WUI users

The maximum number of users allowed to log on to a WUI server is controlled by the MAXUSERS WUI initialization parameter. The default value is 20 users, and the maximum value allowed is 50 users.

If your maximum number of WUI users is approaching the maximum allowed in CPSM V3.2, consider setting up multiple WUI servers to avoid performance constraints.

3.1.5 Archiving the CICS auxiliary trace data set

To avoid overwriting CICS auxiliary trace data that might be useful when diagnosing problems, you are advised to copy your WUI and CMAS CICS auxiliary trace data sets to a Generation Data Group (GDG). Archiving is required:

- Prior to CICS initialization
- When a trace data set becomes full and a switch occurs

First you will need to allocate a GDG for each WUI and CMAS. See example Example 3-1.

Example 3-1 Allocating a Generation Data Group (GDG)

```
//CICSRS4A JOB MSGCLASS=H,NOTIFY=CICSRS4
//*
//*****************************************************************
//* Define a GDG GENERATION DATA GROUP for archived AUX A and B
//* datasets.                                                     *
//*****************************************************************
//*
//DEFGDG EXEC PGM=IDCAMS,REGION=2048K
//SYSPRINT DD SYSOUT=*
//SYSIN DD *
   DEF GDG -
     (NAME(CICSSYSF.CMA1.GDGAUXT) -
     EMPTY -
     NOSCRATCH -
     LIMIT(5))
   DEF GDG -
     (NAME(CICSSYSF.CMA1.GDGBUXT) -
     EMPTY -
     NOSCRATCH -
     LIMIT(5))
/*
```

To archive your CICS auxiliary data sets prior to initialization, add a JCL step prior to the WUI or CMAS startup JCL steps. Example 3-2 could be added to your JCL used to archive.

Example 3-2 Archive auxtrace data sets to a GDG prior to initialization

```
//*********************************************************************
//*                 Archive Aux Trace Data sets                       *
//*********************************************************************
//GENERA   EXEC PGM=IEBGENER,REGION=0M
//SYSPRINT DD SYSOUT=*
//SYSUT1   DD DSN=CICSSYSF.CICS650.CMA1.DFHAUXT,
//            DISP=SHR,BUFNO=10
//SYSIN    DD DUMMY
//SYSUT2   DD DSNAME=CICSSYSF.CMA1.GDGAUXT(+1),
//            SPACE=(CYL,(5),RLSE),VOL=SER=TOTCI1,UNIT=3390,
//            DCB=(RECFM=F,BLKSIZE=4096,LRECL=4096),
//            DISP=(NEW,CATLG,KEEP)
//GENERB   EXEC PGM=IEBGENER,REGION=0M
//SYSPRINT DD SYSOUT=*
//SYSUT1   DD DSN=CICSSYSF.CICS650.CMA1.DFHBUXT,
//            DISP=SHR,BUFNO=10
//SYSIN    DD DUMMY
//SYSUT2   DD DSNAME=CICSSYSF.CMA1.GDGBUXT(+1),
//            SPACE=(CYL,(5),RLSE),VOL=SER=TOTCI1,UNIT=3390,
//            DCB=(RECFM=F,BLKSIZE=4096,LRECL=4096),
//            DISP=(NEW,CATLG,KEEP)
```

To archive your CICS auxiliary data sets when a switch occurs, use automation. When DFHTR0110 is produced, use automation to submit an archive job to copy the inactive trace data set.

3.2 Pre-migration tasks

You need to complete some tasks before you start the migration process. For some of these tasks you might have to consult your MVS systems programmer or other responsible support groups. Examples of these tasks are:

- Authorize the new CPSM V3.2 and TS V3.2 libraries.
- APF authorize the CPSM V3.2 library SEYUAUTH.
- Include the CPSM V3.2 library SEYULINK in the MVS link list.
- Review the IEASYS*xx* member in the SYS1.PARMLIB library. You might need to modify some of the parameters in IEASYS*xx* when you are running CPSM V3.2 and a previous CPSM release, because an ESSS address space will be started for each release. For more information about the ESSS, see

the *CICS Transaction Server for z/OS Installation Guide, Version 3 Release 2,* GC34-6812. See also the discussion “ESSS and multiple CICSPlex SM levels” on page 59.

- For possible back-out purposes, make back-up copies of all previous release components such as JCL, CLISTs, CICS tables, CICS CSDs, CMAS data repositories, and WUI repositories before you begin the migration.

3.3 Migrating your CICSplex SM system components

We recommend that you migrate your CICSPlex SM system components in the order described here. Complete the migration of the CMAS, WUI, and all associated MASes before you restart your migrated system.

Data set naming conventions are not discussed in this chapter. When discussing specific data set names, the low-level supplied qualifier is used, for example, SEYUAUTH.

Note: In this chapter, the system running CICSPlex SM has no security active, so you must take the necessary steps to ensure that all your security permissions and requirements are granted.

3.3.1 Migrating the CMAS

This section describes the steps required to migrate your CMAS from CPSM V3.1 to CPSM V3.2.

You must migrate your CPSM V3.1 CMAS to TS V3.2 at the same time as you migrate the CICS system on which it runs. This is because a CPSM V3.2 CMAS can only run in a CICS system at the same release level. During startup, the CMAS checks the current CICS release level and terminates with message EYUXL0142 if the releases do not match.

To migrate your CMAS:

1. Upgrade your CMAS CSD Language Environment® definitions. The Language Environment resource definitions are in the SCEESAMP data set member CEECCSD. See Example 3-3 for sample JCL.

Example 3-3 Upgrading Language Environment resource definitions

```
//DELCEE   EXEC PGM=DFHCSDUP,REGION=1M
//*
//*  DELETE PREVIOUS VERSION LANGUAGE ENVIRONMENT
//*              ENTRIES FROM CSD
```

```
//*
//STEPLIB  DD DSN=CICSTS32.CICS.SDFHLOAD,DISP=SHR
//DFHCSD   DD DSN=CICSSYSF.CICSTS32.XMA1.DFHCSD,DISP=SHR
//SYSUT1   DD UNIT=SYSDA,SPACE=(1024,(100,100))
//SYSPRINT DD SYSOUT=*
//SYSIN    DD *
  DELETE GROUP(CEE)
/*
//ADDCEE   EXEC PGM=DFHCSDUP,REGION=1M
//*
//*  ADD NEW VERSION LANGUAGE ENVIRONMENT ENTRIES TO CSD
//*
//STEPLIB  DD DSN=CICSTS31.CICS.SDFHLOAD,DISP=SHR
//DFHCSD   DD DSN=CICSSYSF.CICSTS32.XMA1.DFHCSD,DISP=SHR
//SYSUT1   DD UNIT=SYSDA,SPACE=(1024,(100,100))
//SYSPRINT DD SYSOUT=*
//SYSIN    DD DISP=SHR,DSN=CEE.SCEESAMP(CEECCSD)
//*
```

Tailor this job to your specific needs, submit it, and expect zero return codes.

If you are sharing your CSD between your CMAS, WUI, and MAS regions, you need do this only once.

Ensure that this new set of Language Environment resource definitions is the one referenced by your CMAS, WUI, and MAS.

2. Upgrade your CICSPlex SM CSD with the new general CICS TS V3.2 definitions. You can use the sample JCL shown in Example 3-4.

Example 3-4 Upgrading the general CICS resources

```
//CSDUPGD  EXEC PGM=DFHCSDUP,REGION=1M
//*
//*  UPGRADE CSD
//*
//STEPLIB  DD DSN=CICSTS32.CICS.SDFHLOAD,DISP=SHR
//DFHCSD   DD DSN=CICSSYSF.CICSTS32.XMA1.DFHCSD,DISP=SHR
//SYSUT1   DD UNIT=SYSDA,SPACE=(1024,(100,100))
//SYSPRINT DD SYSOUT=*
//SYSIN    DD *
  UPGRADE
/*
```

Tailor this job to your specific needs, submit it, and expect a zero return code.

If you share your CSD between your CMAS, WUI, and MAS regions, you need do this only once.

In this chapter we share the same CSD between CMAS, WUI, and MAS.

Note: You no longer need to manipulate the CICS CSD to obtain the default CPSM resource definitions for the CMAS, WUI, or MAS. CICSPlex SM creates default CICS resource definitions for a CMAS, MAS, and WUI server during an INITIAL start of these systems when the CPSMCONN system initialization parameter is selected. These definitions are also created for a MAS started with the COLM transaction, and for a WUI server started with COVC transaction.

However, if you need to modify these resource definitions, the default resource definitions are supplied in the following members of the SEYUSAMP sample library:

- EYU$CDEF contains the default resource definitions for a CMAS.
- EYU$MDEF contains the default resource definitions for a MAS.
- EYU$WDEF contains the default resource definitions for a WUI server.

3. CMAS aux trace considerations.

   To avoid overwriting CICS auxiliary trace data, which might be useful when diagnosing problems, you are advised to define generation data group (GDG) data sets to archive the CMAS trace data sets. See 3.1.5, “Archiving the CICS auxiliary trace data set” on page 60.

4. Convert your CMAS repository data set using EYU9XDUT.

   First you must create a new EYUDREP data set. You can tailor the sample JCL shown in Example 2-4 to achieve this. Do not attempt to initialize the new data set. It must be empty for EYU9XDUT to work. Change the primary and secondary space allocations to values appropriate to your environment. See Example 3-5.

Example 3-5 Allocating a new data repository data set

```
//STEP01    EXEC PGM=IDCAMS
//SYSPRINT  DD  SYSOUT=*
//SYSIN     DD  *
DEFINE  CLUSTER -
(NAME(CICSSYSF.CICS650.CMA1.EYUDREP) -
RECORDS(500,3000) -
VOLUMES(TOTCI2) -
CISZ(8192) -
RECSZ(200,6550) -
KEYS(64,0) -
SHR(2) -
INDEXED -
```

SPEED -
REUSE)

Once you have allocated the new repository data set, use the sample JCL shown in Example 2-5 to perform the conversion.

You must first shut down the CMAS that is using EYUDREP before running EYU9XDUT, otherwise X'8' is returned when the data set is opened.

The conversion is controlled by the TARGETVER parameter. To convert to CICSPlex SM V3.2, use TARGETVER=0320. The EYUDREP DD must reference an existing input data repository, and the NEWREP DD must reference the new output repository. The BYPASS DD output file is required and may contain records that have not been converted, for example, CRESxxxx CICS resource table records.

CRESxxx is a CICSPlex SM Topology Manager object that describes instances of a resource within a CICS system. ALL CRESxxxx resource table objects are deleted during the conversion process. These deleted records are rebuilt the first time the MAS connects or joins to the CMAS. The following message is written to the SYSPRINT DD statement with a count of how many records were not converted:

```
EYUXD0708I CRESxxxx Resource Table nnnnn records not converted
```

Run the EYU9XDUT conversion job and examine your return code for one of the EYU9XDUT return codes:

0	Execution completed normally.
4	Some records could not be converted.
8	EYU9XDUT has failed.

Example 3-6 Converting the data repository data set

```
//STEP01   EXEC PGM=EYU9XDUT,
//            PARM=('TARGETVER=0320')
//STEPLIB   DD DISP=SHR,
//             DSN=CICSTS32.CPSM.SEYUAUTH
//EYUDREP   DD    DISP=SHR,DSN=CICSSYSF.CPSM.EYUDREP
//NEWREP    DD    DISP=OLD,DSN=CICSSYSF.CPSM.SC53.EYUDREP
//BYPASS DD SYSOUT=*
//SYSPRINT  DD    SYSOUT=*
/*
```

Example 3-7 shows the output from the CMAS data repository conversion job.

Example 3-7 Output from CMAS data repository conversion job

```
ICH70001I CICSRS4  LAST ACCESS AT 14:25:37 ON MONDAY, AUGUST 20, 2007
IEF236I ALLOC. FOR CICSRS4Z STEP01
IEF237I C62C ALLOCATED TO STEPLIB
IEF237I CB00 ALLOCATED TO EYUDREP
IEF237I CB00 ALLOCATED TO NEWREP
IEF237I JES2 ALLOCATED TO BYPASS
IEF237I JES2 ALLOCATED TO SYSPRINT
IEF142I CICSRS4Z STEP01 - STEP WAS EXECUTED - COND CODE 0000
IEF375I  JOB/CICSRS4Z/START 2007232.1438
IEF376I  JOB/CICSRS4Z/STOP  2007232.1438 CPU    0MIN 00.26SEC SRB    0MIN
00.01S
EYUXD0714I  DDNAME NEWREP , Switched to DIRECT update after    2688 records
were written.
EYUXD0708I  CRESxxxx Resource Table     437 records not converted.
EYUXD0702I  Repository successfully converted.
```

5. Update your existing CMAS startup JCL with the new CICS system data set names and CICSPlex SM data set names.

   Remove references to the CAS data sets:

   – BBACTDEF
   – BBVDEF
   – BBIPARM

   Example 3-8 shows the tailored CMAS JCL we used. This JCL includes steps GENERA and GENERB, which archive the CICS auxiliary trace data sets prior to CMAS initialization.

Example 3-8 Tailored CMAS procedure

```
//SCSCCMAS PROC START=COLD,
//         USERHLQ='CICSSYSF.CICS650.CMA1',
//         CICSHLQ='CICSTS32',
//         CPSMHLQ='CICSSYSF.CICS650.CMA1',
//         CSDHLQ='CICSSYSF.CICSTS32.XMA1'
//*****************************************************************
//* USERHLQ - HIGH-LEVEL QUALIFIER OF USER DEFINED CICS RUN TIME DATA
//*           SETS
//* CICSHLQ - HIGH-LEVEL QUALIFIER OF CICS TS SYSTEM LIBRARIES
//*
//* CPSMHLQ - HIGH-LEVEL QUALIFIER OF CPSM REPOSITORY DATA SET
//*
//* CSDHLQ  - HIGH-LEVEL QUALIFIER OF CICS CSD DATA SET
//*
//* START   - TYPE OF CICS START-UP REQUIRED
//*****************************************************************
```

```
//*                Archive Aux Trace Data sets                      *
//*******************************************************************
//GENERA   EXEC PGM=IEBGENER,REGION=0M
//SYSPRINT DD SYSOUT=*
//SYSUT1   DD DSN=&CPSMHLQ..DFHAUXT,
//            DISP=SHR,BUFNO=10
//SYSIN    DD DUMMY
//SYSUT2   DD DSNAME=CICSSYSF.CMA1.GDGAUXT(+1),
//            SPACE=(CYL,(5),RLSE),VOL=SER=TOTCI1,UNIT=3390,
//            DCB=(RECFM=F,BLKSIZE=4096,LRECL=4096),
//            DISP=(NEW,CATLG,KEEP)
//GENERB   EXEC PGM=IEBGENER,REGION=0M
//SYSPRINT DD SYSOUT=*
//SYSUT1   DD DSN=&CPSMHLQ..DFHBUXT,
//            DISP=SHR,BUFNO=10
//SYSIN    DD DUMMY
//SYSUT2   DD DSNAME=CICSSYSF.CMA1.GDGBUXT(+1),
//            SPACE=(CYL,(5),RLSE),VOL=SER=TOTCI1,UNIT=3390,
//            DCB=(RECFM=F,BLKSIZE=4096,LRECL=4096),
//            DISP=(NEW,CATLG,KEEP)
//*******************************************************************
//*                            RUN  CMAS                            *
//*******************************************************************
//CMAS    EXEC PGM=EYU9XECS,REGION=0M,TIME=NOLIMIT,
// PARM=('START=&START,SYSIN')
//*-----------------------------------------------------------------
//*           System initialization overrides
//*-----------------------------------------------------------------
//SYSIN    DD DSN=CICSSYSF.CICSTS32.SYSIN(CMA1SIT),DISP=SHR
//*-----------------------------------------------------------------
//*           CPSM Parameters
//*-----------------------------------------------------------------
//EYUPARM   DD  DISP=SHR,DSN=CICSSYSF.CICSTS32.SYSIN(CMA1CPSM)
//*-----------------------------------------------------------------
//*           CICS and CPSM system data sets
//*-----------------------------------------------------------------
//STEPLIB  DD DSN=&CICSHLQ..CICS.SDFHAUTH,DISP=SHR
//         DD DSN=&CICSHLQ..CPSM.SEYUAUTH,DISP=SHR
//*-----------------------------------------------------------------
//*           CICS RPL
//*-----------------------------------------------------------------
//DFHRPL   DD DSN=&CICSHLQ..CICS.SDFHLOAD,DISP=SHR
//         DD DSN=&CICSHLQ..CPSM.SEYULOAD,DISP=SHR
//         DD DSN=CEE.SCEECICS,DISP=SHR
//         DD DSN=CEE.SCEERUN,DISP=SHR
//         DD DSN=CEE.SCEERUN2,DISP=SHR
//*-----------------------------------------------------------------
//*           CICS CSD
//*-----------------------------------------------------------------
```

```
//DFHCSD   DD DISP=SHR,DSN=&CSDHLQ..DFHCSD
//*-------------------------------------------------------------------
//*           CICS Auxiliary Temporary Storage data set
//*-------------------------------------------------------------------
//DFHTEMP  DD DISP=SHR,DSN=&USERHLQ..DFHTEMP
//*-------------------------------------------------------------------
//*           CICS Intrapartition data set
//*-------------------------------------------------------------------
//DFHINTRA DD DISP=SHR,DSN=&USERHLQ..DFHINTRA
//*-------------------------------------------------------------------
//*           CICS Auxiliary trace GDGs
//*-------------------------------------------------------------------
//DFHAUXT  DD DSN=&USERHLQ..DFHAUXT,DISP=SHR
//*DFHAUXT  DD DSN=&USERHLQ..DFHAUXT(+1),
//*         DCB=(CICSSYSF.CICS65O.DFHAUXT.MODEL,BUFNO=5),
//*         SPACE=(CYL,(25),RLSE),
//*         DISP=(NEW,CATLG)
//DFHBUXT  DD DSN=&USERHLQ..DFHBUXT,DISP=SHR
//*DFHBUXT  DD DSN=&USERHLQ..DFHBUXT(+1),
//*         DCB=(CICSSYSF.CICS65O.DFHBUXT.MODEL,BUFNO=5),
//*         SPACE=(CYL,(25),RLSE),
//*         DISP=(NEW,CATLG)
//*-------------------------------------------------------------------
//*           CICS Local Resource data set
//*-------------------------------------------------------------------
//DFHLRQ   DD DISP=SHR,
//         DSN=&USERHLQ..DFHLRQ
//*-------------------------------------------------------------------
//*           CICS Catalog data sets
//*-------------------------------------------------------------------
//DFHLCD   DD DISP=SHR,DSN=&USERHLQ..DFHLCD
//DFHGCD   DD DISP=SHR,DSN=&USERHLQ..DFHGCD
//*-------------------------------------------------------------------
//*           CICS Extrapartition data set
//*-------------------------------------------------------------------
//DFHCXRF  DD SYSOUT=*
//*-------------------------------------------------------------------
//*           CICS Dump data sets
//*-------------------------------------------------------------------
//DFHDMPA  DD DISP=SHR,DSN=&USERHLQ..DFHDMPA
//DFHDMPB  DD DISP=SHR,DSN=&USERHLQ..DFHDMPB
//*-------------------------------------------------------------------
//*           CPSM CMAS Repository data set
//*-------------------------------------------------------------------
//EYUDREP  DD DISP=SHR,DSN=&CPSMHLQ..EYUDREP
//* END OF CICS START PROCEDURE
```

6. Check your CMAS initialization parameters as defined on the EYUPARM DD statement. Remove the CASNAME(CPSM) parameter. With the removal of

the CAS for CPSM V3.2, this parameter is no longer valid. Any attempt to specify CASNAME now results in the invalid parameter message EYUXL0206E. The CASNAME parameter remains valid for CICSPlex configurations prior to CPSM V3.2. Example 3-9 shows an example of our CMAS initialization parameters.

Example 3-9 CMAS initialization parameters

```
CMAS
SEC(NO)           * Initialize CICSPlex SM security
ALERTVER(1)       * Enhanced format Netview Alerts
APISIGNMSG(NO)    * Supress API Signon / Signoff messages
```

7. Check your System Initialization Table (SIT) parameters. Ensure that you set the following parms:
   - WRKAREA=2048
   - XRES=NO (defaults to YES)
   - XHFS=NO (defaults to YES)
   - GRPLIST=DFHLIST

   See CMAS-related CICS SIT parameters from the CICS Installation Guide for a complete list of related parameters.
8. Cold start your CMAS. See “Restarting your CMAS” on page 92.

This completes the migration of the CMAS.

3.3.2 Migrating the WUI

This section describes the steps required to migrate your WUI from CPSM V3.1 to CPSM V3.2.

Both the WUI server and the CMAS that it connects to must be at the highest level of CICSPlex SM within the CICSplex. Both must be at the same level as the maintenance point in the CMAS (see 3.1.1, “Running CICSPlex SM V3.2 with earlier releases concurrently” on page 57).

You must migrate your WUI before you begin to migrate any of your MASes. Your WUI is a local MAS, so you will be repeating some of these migration steps for each of your MAS regions later.

To migrate your WUI:

1. Migrate the contents of your existing WUI server repository (EYUWREP).

   In CPSM V3.2 some internal WUI repository record versions have been incremented to facilitate new features in view definitions.

If your existing WUI repository contains customized menus, view sets, user groups, or user editor records, you must first migrate these definitions. For migration of your customized WUI respiratory records, you must export them to an extrapartitioned transient data destination COVE. Your exported records will be used later for import to the new CPSM 3.2 WUI repository.

To export your existing menus and view sets:

a. If you do not already have a data set allocated to EYUCOVE DD to receive the exported menus and view sets, you must define one. Figure 2-2 on page 26 shows a sample JCL you can use to allocate a EYUCOVE data set. In this example ISPF 3.2 is used to allocate the data set.

```
 Allocate New Data Set
Command ===>

Data Set Name  . . . : CICSSYSF.CICSTS31.EXPORT

Management class . . .                (Blank for default management class)
Storage class  . . . .                (Blank for default storage class)
 Volume serial . . . . TSTOOB         (Blank for system default volume) **
 Device type . . . . .                (Generic unit or device address) **
Data class . . . . . .                (Blank for default data class)
 Space units . . . . . BLOCK          (BLKS, TRKS, CYLS, KB, MB, BYTES
                                       or RECORDS)
 Average record unit                  (M, K, or U)
 Primary quantity  . . 15             (In above units)
 Secondary quantity    30             (In above units)
 Directory blocks  . . 10             (Zero for sequential data set) *
 Record format . . . . VB
 Record length . . . . 32000
 Block size  . . . . . 32004
 Data set name type  : PDS            (LIBRARY, HFS, PDS, or blank)  *
                                      (YY/MM/DD, YYYY/MM/DD
 Expiration date . . .                 YY.DDD, YYYY.DDD in Julian form
Enter "/" to select option             DDDD for retention period in days
   Allocate Multiple Volumes           or blank)

( * Specifying LIBRARY may override zero directory block)

( ** Only one of these fields may be specified)
```

Figure 3-2 Allocating the EYUCOVE data set

Assign the new data set to the EYUCOVE DD statement in your existing CICSPlex SM V3.1 WUI region. You must specify a member name.

Example 3-10 shows an example of the EYUCOVE DD statement in the WUI.

Example 3-10 The EYUCOVE WUI DD statement

```
//EYUCOVE  DD DISP=SHR,DSN=CICSTS31.EXPORT(EYUEXPRT)
```

b. Restart your WUI.

c. Export the contents of your existing EYUWREP data set by running the COVC transaction from your current WUI. It is not necessary for the WUI to be connected to a CMAS to do this.

   Figure 3-3 shows the screen presented by the COVC transaction.

```
COVC                CICSPlex SM Web User Interface Control
EYUVCTR

                             1. Start Server
                             2. Stop Server
                             3. Status Details
                             4. User Sessions

                             5. Import
                             6. Export

                             7. Trace Flags

  CICSPlex SM, an element of CICS Transaction Server for z/OS, Ver 3 Rel 1
             Licensed materials - Property of IBM. 5655-M15
         (C) Copyright IBM Corp. 1994, 2005. All rights reserved

Current Status : Ready, no CMAS                          Time : 08:10:50
Applid         : SCSCWMA1                                Date : 08/21/2007




PF   1 Help      3 Exit                                          12 Return
```

Figure 3-3 The COVC main screen

d. Select the **Export** option to get the screen shown in Figure 3-4.

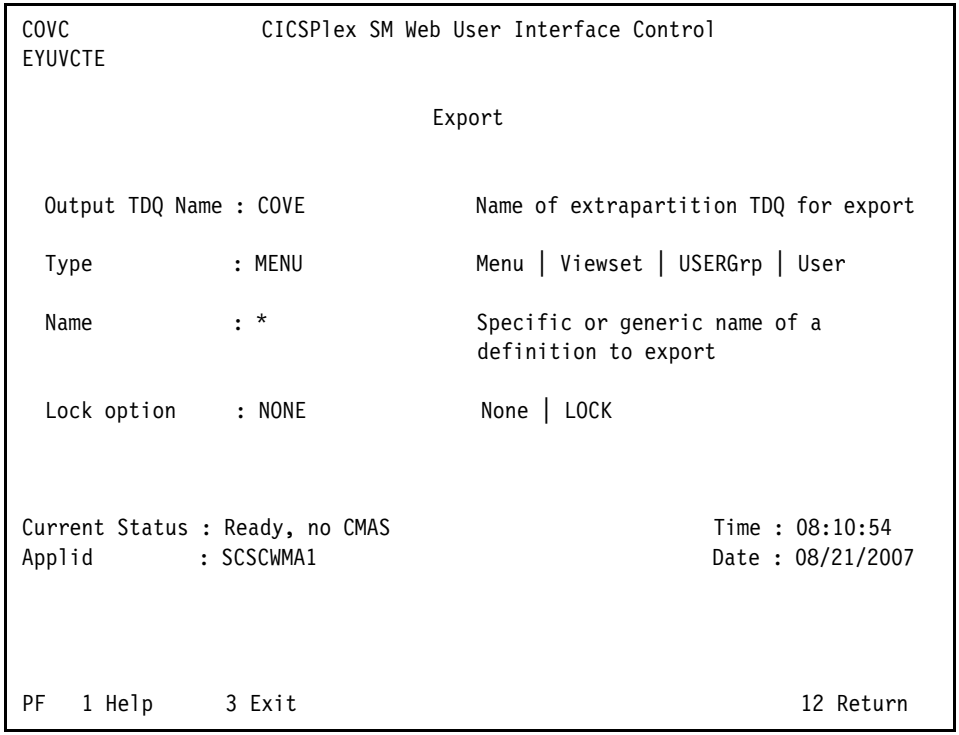

Figure 3-4 The COVC Export screen - Exporting menus

e. Complete the fields in the Export screen:

Output TDQ Name	COVE
Type	Menu
Name	*

Press Enter to get the screen shown in Figure 3-5.

```
COVC                CICSPlex SM Web User Interface Control
EYUVCTE

                                   Export


  Output TDQ Name : COVE              Name of extrapartition TDQ for export

  Type            : MENU              Menu | Viewset | USERGrp | User

  Name            : *                 Specific or generic name of a
                                      definition to export

  Lock option     : NONE               None | LOCK



Current Status : Ready                                    Time : 08:11:01
Applid         : SCSCWMA1                                 Date : 08/21/2007

EYUVS0919I Export completed successfully. 55 objects written.


PF   1 Help      3 Exit                                          12 Return
```

Figure 3-5 Exporting your menus

When this operation completes, message EYUVS0919I is displayed at the bottom of the screen and shows how many objects were written.

Your menus are exported to the EYUCOVE data set, to the member you specified on the DD statement in Example 3-10 on page 71.

You must now edit the EYUCOVE data set to copy the member just created in Figure 3-5 to a new member. If you do not do this, your exported menus will be overwritten when you export your view sets in the next step.

f. Repeat the process for your view sets. Change the type value to Viewset, as shown in Figure 3-6.

```
COVC               CICSPlex SM Web User Interface Control          EYUVCTE

                                   Export


  Output TDQ Name : COVE             Name of extrapartition TDQ for export

  Type            : Viewset          Menu | Viewset | USERGrp | User

  Name            : *                Specific or generic name of a
                                     definition to export

  Lock option     : None             None | LOCK



Current Status : Ready, no CMAS                          Time : 08:11:10
Applid         : SCSCWMA1                                Date : 08/21/2007



PF   1 Help      3 Exit                                          12 Return
```

Figure 3-6 The COVC Export screen - Exporting view sets

g. Complete the fields in the Export screen:

Output TDQ Name COVE
Type Viewset
Name *

Press Enter to get the screen shown in Figure 3-7.

```
COVC                CICSPlex SM Web User Interface Control
EYUVCTE

                                   Export


  Output TDQ Name : COVE              Name of extrapartition TDQ for export

  Type            : VIEWSET            Menu | Viewset | USERGrp | User

  Name            : *                 Specific or generic name of a
                                      definition to export

  Lock option     : NONE               None | LOCK



Current Status : Ready, no CMAS                          Time : 08:11:38
Applid         : SCSCWMA1                                Date : 06/09/2005

EYUVS0919I Export completed successfully. 318 objects written.


PF   1 Help      3 Exit                                          12 Return
```

Figure 3-7 Exporting your view sets

When this operation completes, message EYUVS0919I is displayed at the bottom of the screen and shows how many objects were written.

You must now edit the EYUCOVE data set to copy the member just created in Figure 3-7 to a new member. If you do not do this, your exported menus will be overwritten when you export your view sets in the next step.

h. Repeat the process to export your USERGrp. Change the type value to USERgrp, as show in Figure 3-8.

```
COVC                CICSPlex SM Web User Interface Control
EYUVCTE

                                   Export


  Output TDQ Name : COVE              Name of extrapartition TDQ for export

  Type            : USERGrp            Menu | Viewset | USERGrp | User

  Name            : *                 Specific or generic name of a
                                      definition to export

  Lock option     : NONE               None | LOCK



Current Status : Ready, no CMAS                          Time : 08:13:30
Applid         : SCSCWMA1                                Date : 08/21/2007

EYUVS0919I Export completed successfully.  10 objects written.


PF   1 Help      3 Exit                                          12 Return
```

Figure 3-8 The COVC Export screen - Exporting USER groups

i. Complete the fields in the Export screen:

Output TDQ Name COVE
Type USERGrp
Name *

Press Enter.

When this operation completes, message EYUVS0919I is displayed at the bottom of the screen and shows how many objects were written.

You must now edit the EYUCOVE data set to copy the member just created in Figure 3-8 to a new member. If you do not do this, your exported menus will be overwritten when you export your user records in the next step.

j. Repeat the process to export your User records. Change the type value to USER, as shown in Figure 3-9.

```
COVC               CICSPlex SM Web User Interface Control          EYUVCTE

                                   Export


  Output TDQ Name : COVE             Name of extrapartition TDQ for export

  Type            : User             Menu | Viewset | USERGrp | User

  Name            : *                Specific or generic name of a
                                     definition to export

  Lock option     : NONE             None | LOCK



Current Status : Ready, no CMAS                          Time : 16:22:38
Applid         : SCSCWMA1                                Date : 08/21/2007

EYUVS0919I Export completed successfully. 110 objects written.


PF   1 Help      3 Exit                                          12 Return
```

Figure 3-9 The COVC Export screen - exporting user editor records

k. Complete the fields in the Export screen:

Output TDQ Name COVE
Type User
Name *

Press Enter.

When this operation completes, message EYUVS0919I is displayed at the bottom of the screen and shows how many objects were written.

You must now edit the EYUCOVE data set to copy the member just created in Figure 3-9 to a new member. If you do not do this, your exported menus will be overwritten by the next export.

You now have up to four members in your EYUCOVE data set containing your exported menus, view sets, user groups and user editor records. These members will be used later for import to the new CPSM 3.2 WUI repository.

Note: We used a PDS with a different member for each export. Another way would have been to have used a non-PDS and reinstalled the TDQ pointing at a new PDS data set, avoiding the need for a restart of CICS.

2. Prepare the codepage conversion table.

   You can use the default version of DFHCNV, which is provided in the SDFHLOAD library. This version includes the CPSM required entries provided by member EYU$CNV1 of the SEYUSAMP data set.

   If you use your own version of the DFHCNV source module, assemble and link-edit it using the CICS procedures for maintaining conversion table load modules. A sample copybook is provided in member EYU$CNV1 of the SEYUSAMP data set, which shows the entries that are automatically added when you assemble the table.

3. Define a new EYUWREP repository data set.

   There is sample JCL for this in member EYUJWREP in the SEYUINST installation data set. Example 3-11 shows the tailored JCL to define a new EYUWREP data set.

Example 3-11 Sample JCL to define a new EYUWREP

```
//EYUJREP JOB (999,POK),'CICSTS32',MSGCLASS=T,CLASS=A,
//           NOTIFY=&SYSUID
//*-------------------------------------------------------------
//* Delete Existing WUI Server Repository
//*-------------------------------------------------------------
//DELWREP  EXEC PGM=IDCAMS
//SYSPRINT DD SYSOUT=*
//SYSIN    DD *
   DELETE CICSSYSF.CICSTS32.SCSCWMA1.EYUWREP
   SET MAXCC=0
/*
//*-------------------------------------------------------------
//* Define New WUI Server Repository
//*-------------------------------------------------------------
//DEFWREP  EXEC PGM=IDCAMS
//SYSPRINT DD SYSOUT=*
//SYSIN    DD *
   DEFINE CLUSTER (                                -
                   NAME(CICSSYSF.CICSTS32.SCSCWMA1.EYUWREP )  -
                   VOLUMES(TOTCI2)                 -
                   STORCLAS( STANDARD )            -
                   RECORDS( 5000 5000 )            -
                   CONTROLINTERVALSIZE( 8192 )     -
                   SPANNED                         -
                   INDEXED                         -
```

```
                  SHAREOPTIONS( 2 )             -
                )                               -
          DATA    (                             -
NAME( CICSSYSF.CICSTS32.SCSCWMA1.EYUWREP.DATA ) -
                  KEYS( 20 20 )                 -
                  RECORDSIZE( 8192 32000 )      -
                )                               -
          INDEX   (                             -
                  NAME( CICSSYSF.CICSTS32.SCSCWMA1.EYUWREP.INDEX ) -
                )
/*
```

4. We recommend increasing the size of your WUI DFHTEMP data set. DFHTEMP is used during the import process. The standard CICS sample just has a primary allocation, but you should include a secondary allocation for RECORDS, as shown in Example 3-12.

Example 3-12 Sample JCL to increase DFHTEMP

```
//DEFTS       JOB accounting info, name
//AUXTEMP  EXEC PGM=IDCAMS
//SYSPRINT DD  SYSOUT=A
//SYSIN    DD  *
           DEFINE CLUSTER(NAME(CICSSYSF.CICSTS32.SCSCWMA1.DFHTEMP) -
                   RECORDSIZE(4089 4089) -
                   RECORDS(200 200)     -
                   NONINDEXED           -
                   CONTROLINTERVALSIZE(4096)  -
                   SHAREOPTIONS(2 3) -
                   VOLUMES(volid)) -
                  DATA(NAME(CICSSYSF.CICSTS32.SCSCWMA1.DFHTEMP.DATA) -
                   UNIQUE)
/*
```

5. Update your WUI JCL EYUCOVI DD statement with the data set name containing the exported data from step c on page 71. EYUCOVI DD is now used to import your customized WUI respiratory data.
6. Auxiliary trace considerations for the WUI: To avoid overwriting CICS auxiliary trace data, which might be useful when diagnosing problems, you are advised to define generation data group (GDG) data sets to archive the CMAS trace data sets. See “Archiving the CICS auxiliary trace data set” on page 60.

7. In this step you migrate your history recorder data sets. If you do not have them defined to your existing WUI JCL and you do not intend to use the history recorder, then skip this step.

   To migrate your history recorder data sets (EYUHISTn) you will define new history recorder data sets. If you need to migrate your existing history data sets, tailor the EYUJHIST sample job shown in Example 3-13. Follow the migration instructions supplied as comments. In the example, we commented out the HISTINIT step and uncommented the HISTMIGR step to migrate our history recorder data sets.

   The EYUJHIST sample is supplied uncustomized in the TDFHINST library and customized by DFHISTAR in the XDFHINST library. Remember to edit the WUI startup JCL to include the new history data sets.

   Note: If you are using SMS you can remove the VOL=SER= parameters from the PDS defines and the VOLUME( ) from the VSAM defines.

   When the job is run for the first time expect a return code of 8 from the delete step. Expect return code zero from all other steps and on subsequent runs of the delete step.

Example 3-13 Migrating the history data sets

```
//*********************************************************************
//*--------------------------------------------------------------------
//*
//*     CICSPlex System Manager Sample History JCL
//*     ------------------------------------------
//*
//* NAME        : - EYUJHIST
//* RESOURCE    : - LMAS History data sets. Required to view
//*                 historical task data.
//*
//* DESCRIPTION : - Deletes/Defines LMAS History data sets.
//*
//*                 The sample shows two history data sets each
//*                 specifying a primary space allocation of
//*                 twenty thousand records with no secondary
//*                 allocation. This will result in an
//*                 allocation of approximately 60 cylinders (3390)
//*                 to each data set.
//*
//*                 You may wish to change to other space
//*                 allocation techniques such as use of a
//*                 DATACLASS, particularly if you want to use
//*                 extended format data sets. The JCL assumes
//*                 that SMS is active. If SMS is not active
```

```
//*                you will need to include a VOLUMES parameter
//*                to the define cluster commands.
//*
//*                Each LMAS must have a minimum of two data sets
//*                for historical task data support, but this can
//*                be increased up to a maximum of 26 data sets
//*                (that is EYUHISTA through EYUHISTZ). Each
//*                data set must be defined with REUSE else
//*                historical task data support will not be
//*                activated. When the set of EYUHISTx datasets
//*                is full, the oldest data set will be closed,
//*                set empty, then reopened. For this reason
//*                you should consider spreading historical task
//*                data across multiple data sets to reduce the
//*                amount of data lost when an individual data
//*                set is emptied. To be able to control the
//*                amount of data per dataset and hence the
//*                amount lost when data set reuse occurs it
//*                is recommended not to specify a secondary space
//*                allocation.
//*
//*                The final step preformats the defined History
//*                Files to enable the Recorder function to execute
//*                with optimum speed from first use.
//*
//* MIGRATION : -   If you are migrating your history datasets from a
//*                previous release of CICSPlex System Manager then an
//*                alternate step must be taken: uncomment the
//*                HISTMIGR step at the bottom of the JCL and specify
//*                your history datasets that you would like migrated
//*                as OLDHISTA and OLDHISTB. If you have more than
//*                two datasets you can add them here but
//*                you will need to add a corresponding REPRO command
//*                for each added dataset. Make sure that in the steps
//*                preceding HISTMIGR you are creating new history
//*                datasets and not overwriting your previous
//*                release datasets.
//*
//*
//* Member EYUJHIST variables modified by DFHISTAR are:
//* ---------------------------------------------------
//* @dsindex@  - CMAS DSN High Level Qualifier
//* @thlq@   - High level target library index
//* .@tqual@ - Additional target library index
//* @csysname@ - MAS name and DSN qualifier
//EYUJHST JOB (9999,POK),'CICSTS32',MSGCLASS=T,CLASS=A,
//           NOTIFY=&SYSUID
//*-------------------------------------------------------------------
//* Delete Existing LMAS History Data sets
```

```
//*-------------------------------------------------------------------
//DELHIST  EXEC PGM=IDCAMS
//SYSPRINT DD SYSOUT=*
//SYSIN    DD *

   DELETE CICSSYSF.CICS650.WMA1.EYUHISTA
   DELETE CICSSYSF.CICS650.WMA1.EYUHISTB
   SET MAXCC=0

/*
//*-------------------------------------------------------------------
//* Define New LMAS History Data sets
//*-------------------------------------------------------------------
//DEFHIST  EXEC PGM=IDCAMS
//SYSPRINT DD SYSOUT=*
//SYSIN    DD *
   DEFINE CLUSTER (NAME( CICSSYSF.CICS650.WMA1.EYUHISTA ) -
                   RECORDS( 20000 )                -
                   REUSE                           -
                   SPEED                           -
                   INDEXED                         -
                   VOLUMES(TOTCI1))                -
          DATA    (NAME( CICSSYSF.CICS650.WMA1.EYUHISTA.DATA ) -
                   KEYS( 9 0 )                     -
                   RECORDSIZE( 2500 2504 )         -
                   CONTROLINTERVALSIZE( 32768 ))    -
          INDEX   (NAME( CICSSYSF.CICS650.WMA1.EYUHISTA.INDEX )) -
    DEFINE CLUSTER (NAME( CICSSYSF.CICS650.WMA1.EYUHISTB ) -
                   RECORDS( 20000 )                -
                   REUSE                           -
                   SPEED                           -
                   INDEXED                         -
                   VOLUMES(TOTCI1))                 -
          DATA  (NAME( CICSSYSF.CICS650.WMA1.EYUHISTB.DATA ) -
                   KEYS( 9 0 )                     -
                   RECORDSIZE( 2500 2504 )         -
                   CONTROLINTERVALSIZE( 32768 ))    -
          INDEX (NAME( CICSSYSF.CICS650.WMA1.EYUHISTB.INDEX )))
/*
//*-------------------------------------------------------------------
//* Initialize LMAS History Data sets
//* NOTE: This should only be used for the creation of new datasets.
//* For migration of old datasets to the current CPSM release, delete
//* this HISTINIT job step.
//*-------------------------------------------------------------------
//* HISTINIT EXEC PGM=EYU9XHID
//* STEPLIB  DD DISP=SHR,DSN=CICSTS32.CPSM.SEYULOAD
//*
//* EYUHISTA DD DISP=SHR,DSN=CICSSYSF.CICS650.WMA1EYUHISTA
```

```
//* EYUHISTB DD DISP=SHR,DSN=CICSSYSF.CICS650.WMA1EYUHISTB
//*
//*--------------------------------------------------------------------
//*  WARNING: Read the migration section in the comments above before
//*           uncommenting this step.
//*--------------------------------------------------------------------
//*
//HISTMIGR EXEC PGM=IDCAMS
//*
//OLDHISTA DD DISP=SHR,DSN=CICSSYSF.CICS640.WMA1.EYUHISTA
//OLDHISTB DD DISP=SHR,DSN=CICSSYSF.CICS640.WMA1.EYUHISTB
//NEWHISTA DD DISP=SHR,DSN=CICSSYSF.CICS650.WMA1.EYUHISTA
//NEWHISTB DD DISP=SHR,DSN=CICSSYSF.CICS640.WMA1.EYUHISTB
//*
//SYSPRINT DD SYSOUT=*
//SYSIN    DD *
 REPRO INFILE(OLDHISTA) OUTFILE(NEWHISTA)
 REPRO INFILE(OLDHISTB) OUTFILE(NEWHISTB)
/*
```

8. If your WUI does not share the same CSD as your CMAS, perform the tasks shown in item 1 on page 62 and item 2 on page 63 to upgrade your WUI CSD with the latest Language Environment and general CICS resource definitions.

   You do not need to perform an additional UPGRADE for a release-dependent set of definitions for CPSM resources in the WUI. CPSM V3.2, CICSPlex SM dynamically creates resource definitions for CICSPlex SM during WUI initialization, eliminating the need for CSD resource definitions.

9. Review the WUI CICS system initialization parameters. Example 3-14 shows an example of a WUI SIT used in our migration. The only changes we made were for the reference to the new CICS TS V3.2 in the comment and the GMTEXT.

Example 3-14 Example WUI SIT

```
* ********************************************************************
* CICS TS 3.2 Web User Interface server system initialization override*
* ********************************************************************
AICONS=AUTO
APPLID=SCSCWMA1
AUXTR=ON
CPSMCONN=WUI
CWAKEY=CICS
DSALIM=5M
EDSALIM=128M
GRPLIST=(DFHLIST,WMA1LIST)  Initialize with CICS & CPSM groups
GMTEXT='CICSPlex SM 3.2'
INITPARM=(EYU9VKEC='ENU',EYU9VWAN='ENU1')
```

```
ISC=YES
MAXSOCKETS=300
MXT=300
SEC=NO
SYSIDNT=WMA1
SYSTR=OFF
TCPIP=YES
USERTR=ON
WRKAREA=2048
XCMD=NO
XDB2=NO
XDCT=NO
XEJB=NO
XFCT=NO
XJCT=NO
XPCT=NO
XPPT=NO
XPSB=NO
XTST=NO
XTRAN=NO
XUSER=NO
.END
```

10. Update your existing WUI startup JCL with the new CICS and CPSM system data set names. See Example .

    It is advisable to add a job step before the WUI initialization to copy the aux trace data sets to a Generation Data Group (GDG), as defined in Example 3-15.

Example 3-15 WUI startup JCl

```
//WMA1WUI  PROC START=INITIAL,
//         USERHLQ='CICSSYSF.CICS650.WMA1',
//         CPSMHLQ='CICSTS32.CPSM',
//         CSDHLQ='CICSSYSF.CICSTS32.XMA1',
//         CICSHLQ='CICSTS32.CICS'
//*********************************************************************
//* USERHLQ - HIGH-LEVEL QUALIFIER OF USER DEFINED CICS RUN TIME DATA
//*           SETS
//* CICSHLQ - HIGH-LEVEL QUALIFIER OF CICS TS SYSTEM LIBRARIES
//*
//* CPSMHLQ - HIGH-LEVEL QUALIFIER OF CPSM SYSTEM LIBRARIES
//*
//* CSDHLQ -  HIGH-LEVEL QUALIFIER OF CICS CSD DATA SET
//*
//*
//*********************************************************************
//*                 Archive Aux Trace Data sets                       *
```

```
//*******************************************************************
//GENERA   EXEC PGM=IEBGENER,REGION=0M
//SYSPRINT DD SYSOUT=*
//SYSUT1   DD DSN=&USERHLQ..DFHAUXT,
//            DISP=SHR,BUFNO=10
//SYSIN    DD DUMMY
//SYSUT2   DD DSNAME=CICSSYSF.WMA1.GDGAUXT(+1),
//            SPACE=(CYL,(5),RLSE),VOL=SER=TOTCI1,UNIT=3390,
//            DCB=(RECFM=F,BLKSIZE=4096,LRECL=4096),
//            DISP=(NEW,CATLG,KEEP)
//GENERB   EXEC PGM=IEBGENER,REGION=0M
//SYSPRINT DD SYSOUT=*
//SYSUT1   DD DSN=&USERHLQ..DFHBUXT,
//            DISP=SHR,BUFNO=10
//SYSIN    DD DUMMY
//SYSUT2   DD DSNAME=CICSSYSF.WMA1.GDGBUXT(+1),
//            SPACE=(CYL,(5),RLSE),VOL=SER=TOTCI1,UNIT=3390,
//            DCB=(RECFM=F,BLKSIZE=4096,LRECL=4096),
//            DISP=(NEW,CATLG,KEEP)
//*******************************************************************
//*                          RUN  WUI                               *
//*******************************************************************
//CWUI   EXEC PGM=DFHSIP,REGION=0M,TIME=1440,
// PARM=('START=&START,SYSIN')
//*-----------------------------------------------------------------
//*           System initialization overrides
//*-----------------------------------------------------------------
//SYSIN    DD DSN=CICSSYSF.CICSTS32.SYSIN(WMA1SIT),DISP=SHR
//*
//*-----------------------------------------------------------------
//*           CICS and CPSM system data sets
//*-----------------------------------------------------------------
//STEPLIB  DD DSN=&CICSHLQ..SDFHAUTH,DISP=SHR
//         DD DSN=&CPSMHLQ..SEYUAUTH,DISP=SHR
//*-----------------------------------------------------------------
//*           CICS RPL
//*-----------------------------------------------------------------
//DFHRPL   DD DSN=CICSSYSF.APPL62.LOADLIB,DISP=SHR
//         DD DSN=&CICSHLQ..SDFHLOAD,DISP=SHR
//         DD DSN=&CPSMHLQ..SEYULOAD,DISP=SHR
//         DD DSN=CEE.SCEECICS,DISP=SHR
//         DD DSN=CEE.SCEERUN2,DISP=SHR
//         DD DSN=CEE.SCEERUN,DISP=SHR
//*-----------------------------------------------------------------
//*           CICS CSD
//*-----------------------------------------------------------------
//DFHCSD   DD DISP=SHR,DSN=&CSDHLQ..DFHCSD
//*-----------------------------------------------------------------
//*           CICS Auxiliary Temporary Storage data set
```

```
//*-------------------------------------------------------------------
//DFHTEMP  DD DISP=SHR,
//         DSN=&USERHLQ..DFHTEMP
//*-------------------------------------------------------------------
//*           CICS Intrapartition data set
//*           CICS Intrapartition data set
//*-------------------------------------------------------------------
//DFHINTRA DD DISP=SHR,
//         DSN=&USERHLQ..DFHINTRA
//*-------------------------------------------------------------------
//*           CICS Auxiliary trace GDGs
//*-------------------------------------------------------------------
//DFHAUXT  DD DSN=&USERHLQ..DFHAUXT,DISP=SHR
//DFHBUXT  DD DSN=&USERHLQ..DFHBUXT,DISP=SHR
//*
//*DFHAUXT  DD DSN=&USERHLQ..DFHAUXT(+1),
//*         DCB=(&USERHLQ..DFHAUXT.MODEL,BUFNO=5),
//*         SPACE=(CYL,(25),RLSE),
//*         DISP=(NEW,CATLG)
//*DFHBUXT  DD DSN=&USERHLQ..DFHBUXT(+1),
//*         DCB=(&USERHLQ..DFHBUXT.MODEL,BUFNO=5),
//*         SPACE=(CYL,(25),RLSE),
//*         DISP=(NEW,CATLG)
//*-------------------------------------------------------------------
//*           CICS Local Resource data set
//*-------------------------------------------------------------------
//DFHLRQ   DD DISP=SHR,
//         DSN=&USERHLQ..DFHLRQ
//*-------------------------------------------------------------------
//*           CICS Catalog data sets
//*-------------------------------------------------------------------
//DFHLCD   DD DISP=SHR,
//         DSN=&USERHLQ..DFHLCD
//DFHGCD   DD DISP=SHR,
//         DSN=&USERHLQ..DFHGCD
//*-------------------------------------------------------------------
//*           CICS Extrapartition data set
//*-------------------------------------------------------------------
//DFHCXRF  DD SYSOUT=*
//MSGUSR   DD SYSOUT=*,DCB=(DSORG=PS,RECFM=V,BLKSIZE=136)
//*-------------------------------------------------------------------
//*           CICS Dump data sets
//*-------------------------------------------------------------------
//DFHDMPA  DD DISP=SHR,
//         DSN=&USERHLQ..DFHDMPA
//DFHDMPB  DD DISP=SHR,
//         DSN=&USERHLQ..DFHDMPB
//*-------------------------------------------------------------------
//*           CPSM WUI Repository data set
```

```
//*-------------------------------------------------------------------
//EYUWREP  DD DISP=SHR,
//         DSN=&USERHLQ..EYUWREP
//*-------------------------------------------------------------------
//*           CPSM parameters
//*-------------------------------------------------------------------
//EYUPARM  DD DISP=SHR,
//            DSN=&USERHLQ..CPSMPARM(WMA1WUI)
//            DSN=&USERHLQ..CPSMPARM(WMA1WUI)
//*-------------------------------------------------------------------
//*           WUI initialization parameters
//*-------------------------------------------------------------------
//EYUWUI   DD DISP=SHR,
//            DSN=&USERHLQ..WUIPARM(WMA1WUII)
//*-------------------------------------------------------------------
//*           WUI TDQ for Import
//*-------------------------------------------------------------------
//EYUCOVI  DD DISP=SHR,DSN=&USERHLQ..EYUCOVI(IMPORT1)
//         DD DISP=SHR,DSN=&USERHLQ..EYUCOVI(XMENU)
//         DD DISP=SHR,DSN=&USERHLQ..EYUCOVI(XVIEWSET)
//*-------------------------------------------------------------------
//*           WUI TDQ for Export
//*-------------------------------------------------------------------
//EYUCOVE  DD DISP=SHR,DSN=&USERHLQ..EYUCOVE(EXPORT1)
//*-------------------------------------------------------------------
//*           CPSM log messages
//*-------------------------------------------------------------------
//EYULOG   DD SYSOUT=*
//*-------------------------------------------------------------------
//*           CPSM history data sets
//EYUHISTA DD DISP=OLD,
//            DSN=&USERHLQ..EYUHISTA
//EYUHISTB DD DISP=OLD,
//            DSN=&USERHLQ..EYUHISTB
//* END OF CICS START PROCEDURE
```

11. Check the CPSM EYUPARM initialization parameters.

Example 3-16 EYUPARM initialization parameters for the WUI

```
CICSPLEX(SC66PLEX)   * Specify the CICSplex to which this server belongs
CMASSYSID(CMA1)      * Specify the SYSIDNT of the CMAS managing this MAS
MASPLTWAIT(YES)      * CICS must wait until MAS is fully initialised
MASALTLRTCNT(5)      * The number of alternate long running tasks (CONA)
MASALTLRTPRI(255)    * The priority given to the CONA transaction
MASALTLRTTIM(10)     * The amount of time in seconds for which a CONA
*                      task can be busy before subsequent requests are
*                      directed to another active CONA task
* Note: Add a NAME(@regionname@) parameter if the REGION name is NOT
* the same as the APPLID
```

12. Import the menu and view sets.

In this step you tailor your WUI parameters defined to the WUIPARM DD that will automatically import the CICS TS 3.2 supplied starter set definitions, and your user definitions from the prior release when you start your WUI region for the first time. Once the resource definitions have been imported, comment out the AUTOIMPORT parameters from the WUIPARM for subsequent restarts.

Note: Using the auto-import method avoids an overwrite of the CPSM 3.2 starter set resources from your imported user definitions from the prior release. To ensure that overwrite of the starter set does not occur, CPSM first imports the user definitions from AUTOIMPORTTDQ parameter. Next the CPSM provided views are imported from AUTOIMPORTDSN and AUTOIMPORTMEM parameters.

To import the IBM supplied started set, code the WUIPARMs:

```
AUTOIMPORTDSN(CICSTS32.CPSM.SEYUVIEW)
AUTOIMPORTMEM(EYUEA*)
```

To import your user definitions from the previous release, code the WUIPARM:

```
AUTOIMPORTTDQ(COVI)
```

The COVI TDQ will import from the EYUCOVI DD statement. If you have separate inputs for each of the resource types (Menu, Viewset, Usergrp, and User), then concatenate one DD statement for each input to the EYUCOVI DD statement. For example:

```
//EYUCOVI  DD DISP=SHR,DSN=&USERHLQ..EYUCOVI(MENU)
//         DD DISP=SHR,DSN=&USERHLQ..EYUCOVI(VIEWSET)
//         DD DISP=SHR,DSN=&USERHLQ..EYUCOVI(USERGRP)
//         DD DISP=SHR,DSN=&USERHLQ..EYUCOVI(USER)
```

After your WUI region has been COLD started, you will see EYULOG messages:

```
EYUVS1016I Import 'ALL  (OVERWRITE)' initiated for user (CICSUSER) from TDQ
(COVI).
EYUVS1018I Import completed successfully. 376 objects read from TDQ (COVI).
EYUVS1063I Import 'ALL  (OVERWRITE)' initiated for user (CICSUSER) from
data
EYUVS1063I set(CICSTS32.CPSM.SEYUVIEW), member (EYUEA*).
EYUVS1064I      Import completed successfully. 285 objects read from data
set (CICSTS32.CPSM.SEYUVIEW),
EYUVS1064I member (EYUEA*).
```

Alternatively, you can use the CICSPlex SM Web User Interface Control panel to import resource definitions to the new WUI data respiratory. Log on to the WUI and use the COVC transaction. For more information about using the COVC transaction, see “Importing WUI definitions using COVC” in the CICSPlex SM Web User Interface Guide.

Check your WUI initialization parameters as defined on the EYUWUI DD statement. Example 3-17 shows our WUI initialization parameters. See also “Maximum WUI users” on page 16.

Example 3-17 Sample WUI initialization parameters

```
* WMA1 WUI Server initialization parameters
*
AUTOIMPORTTDQ(COVI)            * Note:
*                                AUTOIMPORTTDQ is used the first
*                                time the WUI is started to import
*                                your user view and viewsets
*                                from EYUCOVI DD.
AUTOIMPORTDSN(CICSTS32.CPSM.SEYUVIEW)
AUTOIMPORTMEM(EYUEA*)
*                           Note: AUTOIMPORTDSN and AUTOIMPORTMEM
*                                 are used the first time the WUI
*                                 is started to import the IBM supplied
*                                 started set views and view sets.
*                                 AUTOIMPORTMEM member EYUEA* will
*                                 import all the English language
*                                 menus and view sets.
DATEFORMAT(DDMMYYYY)
DEFAULTMENU(ITSO_MAINMENU)
DEFAULTNAVIGATE(ITSO_NAVIGATE)
DEFAULTCMASCTXT(SCSCCMA1)        * Specify the CMAS managing this server
DEFAULTCONTEXT(SC53PLEX)         * Specify a CICSplex name
DEFAULTSCOPE(SC53PLEX)           * Specify the default scope
GMMTEXTMSG(YES)                  * Show CICS GMMTEXT to Users
TCPIPHOSTNAME(WTSC53.ITSO.IBM.COM) * Specify the server's MVS host name
TCPIPPORT(9001)                  * Specify a unique TCP/IP port number
```

13. Close your WUI and restart your new CICSPlex SM V3.2 WUI with a COLD start.

This completes the migration of the WUI.

3.3.3 Migrating a MAS

This section describes the steps required to migrate your MASs from CPSM V3.1 to CPSM V3.2. The CPSM code that executes in the MAS is referred to as the CPSM agent code. In this section, the CPSM agent code is converted to CPSM 3.2 while your CICS TS code remains at the prior release, CICS TS 3.1.

To migrate your MAS to CPSM 3.2:

1. Remove group EYU310G1 from your MAS GRPLIST.
2. If you have history recorder data sets in the MAS, migrate them using EYUJHIST. See Example 3-13 on page 80.
3. Update the MAS JCL with the CPSM 3.2 data sets. For DD STEPLIB update the SEYUAUTH data set. For the DD DFHRPL update the SEYULOAD.
4. When previous release modules are in the LPA, ensure that the CPSM 3.2 modules are used in place of the previous release modules (see the *CICS Transaction Server for z/OS Installation Guide).*
5. Cold start the MAS. See “Restarting your MAS” on page 97.

Note that you may optionally upgrade your CICS code at the same time as you upgrade your CPSM agent code. To upgrade your MAS to CICS TS 3.2, follow the *CICS TS 3.2 Migration Guide*, section “Migration to CICS Transaction Server for z/OS, Version 3 Release 2.”

If your MAS is local to the upgraded CMAS, then the MAS CPSM agent code must be upgraded to CPSM 3.2. Otherwise, you see the following CPSM messages in your MAS start up:

```
EYUNX0001I SCSCMMA1 LMAS PLTPI program starting
EYUXL0003I SCSCMMA1 CPSM Version 310  LMAS startup in progress
EYUXL0104E SCSCMMA1 No ESSS for current CICSPlex SM release
EYUXL0025I SCSCMMA1 Waiting for ESSS for CICSPlex SM release
```

Workload management

If you use the workload management functions of CICSPlex SM and you use your own copy of the CICSPlex SM user-replaceable Workload Routing Action Module, EYU9WRAM, you must recompile and link-edit your version of EYU9WRAM. For information about how to do this, including a sample JCL, see

the *CICSPlex System Manager Managing Workloads* book, available at the software information center:

http://publib.boulder.ibm.com/infocenter/cicsts/v3r2/index.jsp?topic=/com.ibm.cics.ts.doc/eyuaa/topics/eyuaa_overview.html

Application programming interface

We recommend that you recompile your MAS CPSM API programs with current versions of the copybooks, and change your CONNECT command for the new version 320.

However, for migration purposes, CPSM API programs may continue to connect at the previous 310 version in a CICSPlex SM V3.2 MAS. If you cannot change your CPSM API code to connect at the new version level 320 when migrating your MAS, your are advised to change the version as soon as possible after completing your MAS migration. API programs connecting at the previous release level to a CPSM 3.2 CMAS may experience increased execution and CPU times. The increase is due to translation of the data from the new version back to the old version.

For more information about compatibility between releases of the API, see the *CICSPlex System Manager Application Programming Guide*, available at the Software information center:

http://publib.boulder.ibm.com/infocenter/cicsts/v3r2/index.jsp?topic=/com.ibm.cics.ts.doc/eyup1/topics/eyup1_overview.html

This completes the migration of the MAS.

Repeat this procedure for each of your MAS regions.

3.4 Restarting your migrated systems

Your migration is complete and you can now stop your CPSM V3.1 CAS, CMAS, WUI, and MAS regions and restart the CICSPlex SM V3.2 versions.

Note: The CPSM V3.1 CAS is not required for CPSM v3.2 and should remain down.

The CPSM V3.1 ESSS job EYUX310 requires an IPL to terminate. If you are unable to IPL, you may optionally use the EYU9XEUT utility to terminate the ESSS. See the “Stopping the ESSS(TERMINATE)” section of the CICSPlex SM Problem Determination manual.

3.4.1 Restarting your CMAS

Start the new CMAS procedure using the MVS START command, using a CICS INITIAL start. Subsequent startups should be AUTO or COLD, according to your requirements.

Example 3-18 shows the JES messages from a successful CMAS startup.

Example 3-18 Successful CMAS startup JESMSGLG messages

```
EYUXL0001I SCSCCMA1 CMAS PLTPI program starting
EYUXL0002I SCSCCMA1 CICS TRACE active
EYUXL0017I SCSCCMA1 CMAS PLTPI program terminating
DFHSI1517 SCSCCMA1 Control is being given to CICS.
DFHEJ0102 SCSCCMA1 Enterprise Java domain initialization has ended.
EYUXL0003I SCSCCMA1 CPSM Version 320  CMAS startup in progress
EYUXL0022I SCSCCMA1 CMAS Phase I initialization complete
EYUXL0211I SCSCCMA1 CPSM Start Up Parameters.
EYUXL0212I SCSCCMA1 *CASNAME(CPSM)           <-- REMOVE CASNAME TO RUN WITHOUT CAS.
EYUXL0212I SCSCCMA1 SEC(YES)          * Initialize CICSPlex SM security.
EYUXL0212I SCSCCMA1 ALERTVER(1)       * Enhanced format Netview Alerts.
EYUXL0212I SCSCCMA1 APISIGNMSG(NO)    * Supress API Signon / Signoff messages.
EYUXL0032I SCSCCMA1 ESSS connection in progress.
EYUXL0004I SCSCCMA1 ESSS connection complete.
EYUCW0108I SCSCCMA1 Time zone offset from GMT computed based on  577
TIMEZONE operand in SYS1.PARMLIB(CLOCKxx) or the Sysplex Timer®.
EYUXL0007I SCSCCMA1 CMAS Phase II initialization complete.
EYUCL0015I SCSCCMA1 Receive Link Task initiated for MRO Network connection with CMAS SCSCCMAS.
EYUCL0015I SCSCCMA1 Send Link Task initiated for MRO Network connection with CMAS SCSCCMAS.
EYUCL0012I SCSCCMA1 Connection of SCSCCMA1 to SCSCCMAS started.
EYUCL0012I SCSCCMA1 Connection of SCSCCMA1 to SCSCCMAS complete.
EYUTS0001I SCSCCMA1 Topology Join for SCSCPTA2 Initiated - APPLID(SCSCPTA2) CICSplex(SC66PLEX).
EYUTS0001I SCSCCMA1 Topology Join for SCSCPJA7 Initiated - APPLID(SCSCPJA7) CICSplex(SC66PLEX).
EYUTS0001I SCSCCMA1 Topology Join for SCSCPJA2 Initiated - APPLID(SCSCPJA2) CICSplex(SC66PLEX).
EYUTS0001I SCSCCMA1 Topology Join for SCSCPAA4 Initiated - APPLID(SCSCPAA4) CICSplex(SC66PLEX).
EYUXL0007I SCSCCMA1 CMAS Phase III initialization complete.
EYUXL0007I SCSCCMA1 CMAS Phase IV initialization complete.
EYUTS0003I SCSCCMA1 Topology Join for SCSCPJA2 Complete  - APPLID(SCSCPJA2) CICSplex(SC66PLEX).
EYUTS0003I SCSCCMA1 Topology Join for SCSCPTA2 Complete  - APPLID(SCSCPTA2) CICSplex(SC66PLEX).
EYUTS0003I SCSCCMA1 Topology Join for SCSCPJA7 Complete  - APPLID(SCSCPJA7) CICSplex(SC66PLEX).
EYUTS0003I SCSCCMA1 Topology Join for SCSCPAA4 Complete  - APPLID(SCSCPAA4) CICSplex(SC66PLEX).
EYUPN0005W SCSCCMA1 Notify created for SAM, Context=SC66PLEX,  593
Target=SCSCPTA1, Sev=VHS, Event=!!SAMOPS, Text=SA: System
unavailable.
EYUXL0010I SCSCCMA1 CMAS initialization complete.
```

Example 3-19 Successful CMAS startup EYULOG messages

```
EYUXM0001I Message Services initialization complete.
EYUXL0006I Parameter Services initialization has started.
EYUXL0211I CPSM Start Up Parameters.
EYUXL0212I *CASNAME(CPSM)       <-- REMOVE CASNAME TO RUN WITHOUT CAS.
EYUXL0212I SEC(YES)       * Initialize CICSPlex SM security.
EYUXL0212I ALERTVER(1)     * Enhanced format Netview Alerts.
```

```
EYUXL0212I APISIGNMSG(NO)   * Supress API Signon / Signoff messages.
EYUXL0214I Parameter Services initialization complete.
EYUXL0006I Common Services initialization has started.
EYUXS0001I Common Services initialization complete.
EYUXL0032I ESSS connection in progress.
EYUXL0004I ESSS connection complete.
EYUXL0006I Data Cache initialization has started.
EYUXC0001I Data Cache initialization complete.
EYUXL0006I Queue Manager initialization has started.
EYUXQ0001I Queue Manager initialization complete.
EYUXL0132I Notification Services Long Running Task has started.
EYUXM0100I Consolidated message log long running task started.
EYUXL0006I Data Repository initialization has started.
EYUXD0005I Managed Object Services initialization has started.
EYUXD0018I Enhanced MOS initialization in progress.
EYUXD0019I Enhanced MOS initialization complete.
EYUXD0112I API initialization has started.
EYUXD0800I API initialization complete.
EYUXD0001I Data Repository initialization complete.
EYUXL0006I Communications initialization has started.
EYUCI0010I Communications link to CMAS SCSCCMAS being added to Connection List.
EYUCI0011I Add of Communications link to CMAS SCSCCMAS successful.
EYUCI0003I Security Services initialization has started.
EYUCR0001I Security Services initialization complete.
EYUCI0003I Connection Services initialization has started.
EYUCP0200I CMAS  SCSCCMA1 Being added to CMAS directory in CMAS  SCSCCMA1.
EYUCP0200I CMAS  SCSCCMAS Being added to CMAS directory in CMAS  SCSCCMA1.
EYUCP0004I Connection Services long-running task initialization has started.
EYUCP0005I Connection Services long-running task initialization complete.
EYUCR0002I Security Services long-running task initialization complete.
EYUCI0003I Transport Services initialization has started.
EYUCT0001I Transport Services initialization complete.
EYUCI0003I Link Set Services initialization has started.
EYUCS0002I Communications long-running task initialization has started.
EYUCS0003I Communications long-running task initialization complete.
EYUCS0001I Link Set Services initialization complete.
EYUCI0003I Protocol Services initialization has started.
EYUCL0001I Protocol Services initialization complete.
EYUCI0003I Timing Services initialization has started.
EYUCW0108I Time zone offset from GMT computed based on TIMEZONE operand in
SYS1.PARMLIB(CLOCKxx)
EYUCW0108I  or the Sysplex Timer.
EYUCL0002I ESSS Initial Contact Transient initiated.
EYUCL0003I ESSS Receive Link Manager initiated.
EYUCL0019I Communications buffer long-running task initialization has started.
EYUCL0020I Communications buffer long-running task initialization complete.
EYUCL0020I Communications buffer long-running task initialization complete.
EYUCW0107I Plex end-of-interval is set to occur once every 60 minutes for
context (SC53PLEX).
```

```
EYUCW0107I Plex end-of-interval is set to occur once every 480 minutes for
context (SC66PLEX).
EYUCW0001I Timing Services initialization complete.
EYUCI0001I Communications initialization complete.
EYUXL0007I CMAS Phase II initialization complete.
EYUXL0006I Topology initialization has started.
EYUTI0009I Topology warm start for SCSCPAA1 initiated - APPLID(SCSCPAA1)
CICSplex(SC66PLEX).
EYUTI0009I Topology warm start for SCSCPTA1 initiated - APPLID(SCSCPTA1)
CICSplex(SC66PLEX).
EYUTI0009I Topology warm start for SCSCWMA1 initiated - APPLID(SCSCWMA1)
CICSplex(SC66PLEX).
EYUXL0006I Monitor initialization has started.
EYUXL0006I WLM initialization has started.
EYUXL0006I RTA initialization has started.
EYUXL0006I BAS initialization has started.
EYUCL0015I Receive Link Task initiated for MRO Network connection with CMAS
SCSCCMAS.
EYUCS0010I Enhanced MRO Network connection to CMAS SCSCCMAS being initialized.
EYUCL0015I Send Link Task initiated for MRO Network connection with CMAS
SCSCCMAS.
EYUCL0012I Connection of SCSCCMA1 to SCSCCMAS started.
EYUCS0006I MRO network connection CMASSEND assigned to link set.
EYUCP0030I Connected directly to CMAS SCSCCMAS.
EYUCL0012I Connection of SCSCCMA1 to SCSCCMAS complete.
EYUCP0203I Repository Synchronization started with CMAS SCSCCMAS.
EYUCP0204I Repository Synchronization successfully ended with CMAS SCSCCMAS.
EYUTI0004I Topology Initialization Complete.
EYUTS0060I Topology ResMap Hardening long-running task Initialization Complete.
EYUTS0001I Topology Join for SCSCPTA2 Initiated - APPLID(SCSCPTA2)
CICSplex(SC66PLEX).
EYUTS0001I Topology Join for SCSCPJA7 Initiated - APPLID(SCSCPJA7)
CICSplex(SC66PLEX).
EYUTS0001I Topology Join for SCSCPJA2 Initiated - APPLID(SCSCPJA2)
CICSplex(SC66PLEX).
EYUTS0001I Topology Join for SCSCPAA4 Initiated - APPLID(SCSCPAA4)
CICSplex(SC66PLEX).
EYUMM0001I Monitor Initialization Complete.
EYUWI0001I Workload Manager Task Initialization Started.
EYUWI0003I WLM Initialization Complete.
EYUPI0001I RTAALZ initialization has started.
EYUPR0001I RTAALZ initialization complete.
EYUPI0001I RTAEVL initialization has started.
EYUPE0001I RTAEVL initialization complete.
EYUWI0002I Workload Manager Task Initialization Complete.
EYUPI0001I RTASAM initialization has started.
EYUPS0001I RTASAM initialization complete.
EYUPI0001I RTAACT initialization has started.
EYUPN0001I RTAACT initialization complete.
```

```
EYUPI0001I RTAAPM initialization has started.
EYUPP0001I RTAAPM initialization complete.
EYUPI0001I RTAMRM initialization has started.
EYUPM0001I RTAMRM initialization complete.
EYUPI0002I RTA initialization complete.
EYUBI0004I BAS initialization for CICSplex SC53PLEX has started.
EYUBI0005I BAS initialization for CICSplex SC53PLEX is complete.
EYUBI0004I BAS initialization for CICSplex SC66PLEX has started.
EYUBI0005I BAS initialization for CICSplex SC66PLEX is complete.
EYUBI0003I BAS initialization complete.
EYUXL0007I CMAS Phase III initialization complete.
EYUXL0007I CMAS Phase IV initialization complete.
EYUTS0003I Topology Join for SCSCPJA2 Complete  - APPLID(SCSCPJA2)
CICSplex(SC66PLEX).
EYUTS0003I Topology Join for SCSCPTA2 Complete  - APPLID(SCSCPTA2)
CICSplex(SC66PLEX).
EYUTS0003I Topology Join for SCSCPJA7 Complete  - APPLID(SCSCPJA7)
CICSplex(SC66PLEX).
EYUTS0003I Topology Join for SCSCPAA4 Complete  - APPLID(SCSCPAA4)
CICSplex(SC66PLEX).
EYUWM0424I Target region (SCSCPAA4) has been activated for Workload (WLS3270).
EYUPN0005W Notify created for SAM, Context=SC66PLEX, Target=SCSCPTA1, Sev=VHS,
Event=!!SAMOPS,
EYUPN0005W  Text=SA: System unavailable.
EYUXL0010I CMAS initialization complete.
```

3.4.2 Restarting your WUI

Restart your WUI using a CICS COLD start. For subsequent startups:

- The WUI should be AUTO or COLD, according to your requirements.
- You may want to remove the EYUWUI parameters AUTOIMORTDSN and AUTOIMPORTMEM because the CPSM starter set only needs to be imported once on the first startup.

Example 3-20 shows the JES messages from a successful WUI startup.

Example 3-20 Successful WUI startup JESMSGLG

```
EYUNX0001I LMAS PLTPI program starting
EYUXL0003I CPSM Version 320  LMAS startup in progress
EYUXL0022I LMAS Phase I initialization complete
EYUXL0211I CPSM Start Up Parameters.
EYUXL0212I CICSPLEX(SC53PLEX)
EYUXL0212I CMASSYSID(CMA1)
EYUXL0212I MASPLTWAIT(YES)
EYUXL0212I MASALTLRTCNT(5)
EYUXL0212I MASALTLRTPRI(255)
```

```
EYUXL0212I MASALTLRTTIM(10)
EYUXL0212I * Note: Add a NAME(@regionname@) parameter if the REGION name is
NOT.
EYUXL0212I * the same as the APPLID.
EYUXL0030I ESSS connection in progress to CICSPLEX(SC53PLEX) for SYSID(CMA1).
EYUXL0004I ESSS connection complete.
EYUCL0006I ESSS link to SCSCCMA1 established.
EYUXL0007I LMAS Phase II initialization complete.
EYUNL0088I ( 5 ) alternate LRTs were requested and ( 5 ) were started.
EYUNL0099I LMAS LRT initialization complete.
EYUNL0089I Alternate LRT is performing message processing.
DFHSI8440I Initiating connection to CICSPlex SM Web User Interface.
EYUVS0950I WEB USER INTERFACE SERVER PLT START
EYUNL0170I History Recorder has been activated.
DFHSI1517  Control is being given to CICS.
DFHEJ0102  Enterprise Java domain initialization has ended.
DFHSO0101I Sockets domain initialization has ended.
EYUVS0001I CICSPLEX SM WEB USER INTERFACE INITIALIZATION STARTED.
EYUVS0002I CICSPlex SM Web User Interface initialization complete.
```

Example 3-21 shows the EYULOG messages from a successful WUI startup.

Example 3-21 WUI Successful EYULOG messages

```
EYUVS0001I CICSPLEX SM WEB USER INTERFACE INITIALIZATION STARTED.
EYUVS0107I READING STARTUP PARAMETERS.
EYUVS0109I DATEFORMAT(DDMMYYYY)
EYUVS0109I DEFAULTMENU(ITSO_MAINMENU)
EYUVS0109I DEFAULTNAVIGATE(IBM_CMZNAVIGATE)
EYUVS0109I DEFAULTCMASCTXT(SCSCCMA1)
EYUVS0109I DEFAULTCONTEXT(SC53PLEX)
EYUVS0109I DEFAULTSCOPE(SC53PLEX)
EYUVS0109I GMMTEXTMSG(YES)
EYUVS0109I TCPIPHOSTNAME(WTSC53.ITSO.IBM.COM)
EYUVS0109I TCPIPPORT(9001)
EYUVS0108I STARTUP PARAMETERS READ.
EYUVS0101I Parameter service initialization complete.
EYUVS0200I Starting CICS Web Interface.
EYUVS0204I TCP/IP service (EYUWUI) installed successfully.
EYUVS0206I CICS Web Interface enabled on TCP/IP port number 9001.
EYUVS0002I CICSPlex SM Web User Interface initialization complete.
EYUVS0010I Server connected to CMAS, SYSID(CMA1).
```

3.4.3 Restarting your MAS

Restart your MAS using a CICS COLD start. Subsequent startups should be AUTO or COLD, according to your requirements.

Example 3-22 shows the messages from a successful MAS startup.

Example 3-22 Successful MAS startup

```
DFHSI8440I Initiating connection to CICSPlex SM.
EYUNX0001I LMAS PLTPI program starting
EYUXL0003I CPSM Version 320  LMAS startup in progress
EYUXL0022I LMAS Phase I initialization complete
EYUXL0211I CPSM Start Up Parameters.
EYUXL0212I CICSPLEX(SC53PLEX)
EYUXL0212I CMASSYSID(CMA1)
EYUXL0212I MASPLTWAIT(NO)
EYUXL0212I STALLTRMTSK(1).
EYUXL0212I STALLTRMCNT(2).
EYUXL0212I MASALTLRTCNT(5)
EYUXL0212I MASALTLRTPRI(255)
EYUXL0212I MASALTLRTTIM(10)
DFHSI1517  Control is being given to CICS.
DFHSO0101I Sockets domain initialization has ended.
DFHEJ0102 Enterprise Java domain initialization has ended.
EYUXL0030I ESSS connection in progress to CICSPLEX(SC53PLEX) for SYSID(CMA1).
EYUXL0004I ESSS connection complete.
EYUCL0006I ESSS link to SCSCCMA1 established.
EYUXL0007I LMAS Phase II initialization complete.
EYUNL0088I ( 5 ) alternate LRTs were requested and ( 5 ) were started.
EYUNL0099I LMAS LRT initialization complete.
EYUNL0089I Alternate LRT is performing message processing.
EYUNL0170I History Recorder has been activated.
```

Repeat the procedure to start all of your MAS regions.

3.5 Post-migration tasks

Perform the post-migration tasks you have in place at your organization. Some basic CICSPlex SM clean-up procedures are described here.

3.5.1 Clean up earlier CICSPlex SM definitions

When you have successfully migrated your CICSPlex SM environment to CICSPlex SM V3.2 you can delete the previous version resource definitions from

the CMAS, WUI, and MAS CSDs by running a DFHCSDUP job. Example 3-23 shows a sample job to achieve this.

Example 3-23 Removing earlier CICSPlex SM resources

```
//CSDUPGD  EXEC PGM=DFHCSDUP,REGION=1M
//*
//*  CLEANUP OLD CPSM 3.1 DEFINITIONS
//*
//STEPLIB  DD DSN=CICSTS32.CICS.SDFHLOAD,DISP=SHR
//         DD DSN=CICSTS32.CPSM.SEYULOAD,DISP=SHR
//DFHCSD   DD DSN=CICSSYSF.CICSTS32.XMA1.DFHCSD,DISP=SHR
//SYSUT1   DD UNIT=SYSDA,SPACE=(1024,(100,100))
//SYSPRINT DD SYSOUT=*
//SYSIN    DD *
  UPGRADE USING(EYU9R310)
/*
```

In the example shown in Example 3-23 you are removing CPSM V3.1 entries from the CICS System Definition (CSD) file. Run this job against the CSD used by your CMAS, WUI, and MAS regions.

The module that deletes the previous release entries is in the SEYULOAD data set and is release-dependent. *nnn* in the module name EYU9R*nnn* indicates the version to be removed.

Example 3-24 shows the output from the job in Example 3-23. Your CSD might not contain all the items that the program attempts to delete, so expect either a return code of zero or 4 from this job.

Example 3-24 Output of job to remove CICSPlex SM resources

```
  UPGRADE USING(EYU9R310)



DFH5120 I PRIMARY CSD OPENED; DDNAME: DFHCSD
DFH5280 I PROCESSING DEFINITIONS FROM LIBRARY MEMBER EYU9R310
DFH5270 I GROUP EYU310G0 DELETED FROM THE CSD.
DFH5270 I GROUP EYU310G1 DELETED FROM THE CSD.
DFH5270 I GROUP EYU310GW DELETED FROM THE CSD.
DFH5270 I LIST  EYU310L0 DELETED FROM THE CSD.
DFH5101 I UPGRADE COMMAND EXECUTED SUCCESSFULLY.
DFH5123 I PRIMARY CSD CLOSED; DDNAME: DFHCSD
```

```
DFH5107 I COMMANDS EXECUTED SUCCESSFULLY: 1     COMMANDS GIVING WARNING(S): 0
COMMANDS IN ERROR: 0
DFH5108 I COMMANDS NOT EXECUTED AFTER ERROR(S): 0
DFH5109 I END OF DFHCSDUP UTILITY JOB. HIGHEST RETURN CODE WAS: 0
```

4

CICSPlex SM Web User Interface default menus and views

In this chapter we describe the following functions that are available in the CICSPlex SM Web User Interface (WUI):

- Managing CICSPlex System Manager (CPSM) resources

  Workload creation using the WUI

  - Defining the workload environment using topology
  - Defining workload resources using Business Application Services (BAS)
  - Defining routing requirements using Workload Management (WLM)
- Managing CICS resources
  - Disabling transactions across many CICS systems using the WUI
  - Using the **newcopy** command from the WUI
  - Closing files across the CICSplex using the WUI
  - Disabling a URIMAP to prevent a Web service from executing in a CICS system

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4.1 Managing CICSPlex system manager resources

Figure 4-1 CICSPlex System Manager WUI main window

The WUI window is divided into three frames. The assistance frame is at the top of the window and contains icons to navigate to the home menu, the previous menu, and the previous window. It also contains a link to the Information Center, which requires that the URL of the Information Center be provided in the WUI

server's SIT parameters. The navigation frame is at the left side of the window, and contains the navigation menu defined in the WUI server's WUIPARM parameters, or the starter set navigation menu, EYUSTARTNAVIGATE. It also contains special links to access the favorites editor, view editor, and user editor, and to refresh, open, and close WUI windows. The work area is the large area on the right side of the window where menus and views are displayed. Only the work area frame will be shown in most figures in this chapter.

CPSM resources are created and managed through administration views accessed from the main WUI menu. Click **Administration views** to display the Administration views menu (Figure 4-2).

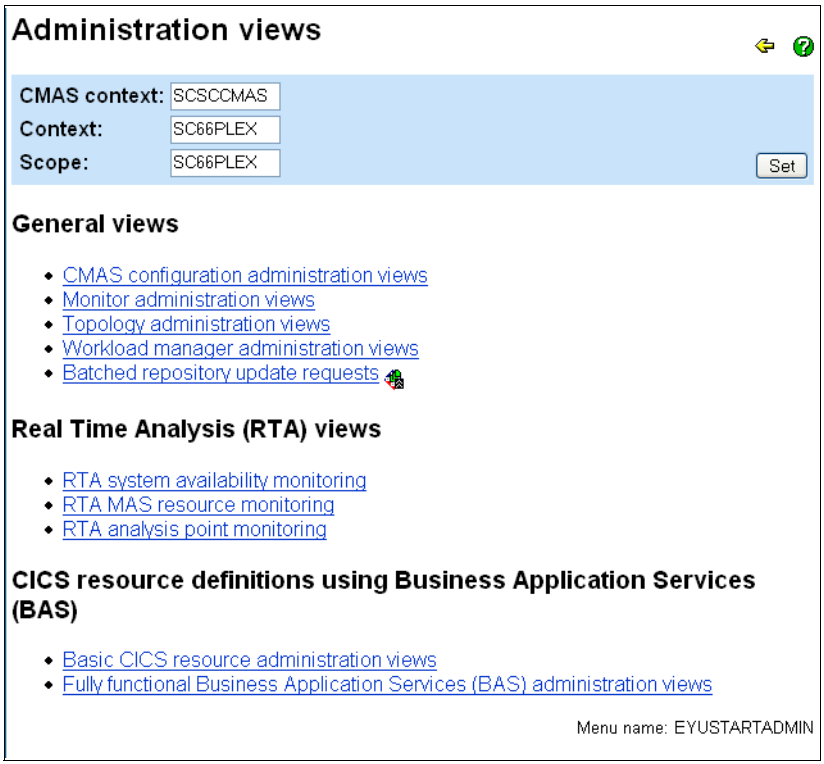


Figure 4-2 Administration views

In this example, you take an existing sample application and create the necessary CPSM resources to let the application be installed and managed by CPSM. You take advantage of CPSM's (WLM) component to let the application's transactions be dynamically routed to the best target system.

4.1.1 Defining the workload environment using topology

Because the application already runs in existing CICS systems, you do not need to create CICS System Definitions (CSYSDEFs). However, you have to create CICS System Groups (CSYSGRPs) that define the systems into which application resources will be installed by BAS, and which will serve as routing and target regions for WLM. Views for creation and management of topology resources are entered from the Topology administration views menu (Figure 4-3).

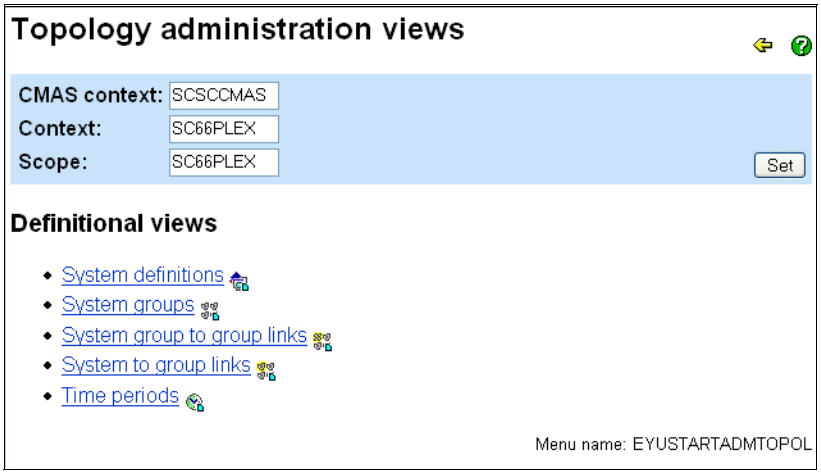


Figure 4-3 Topology administration views

Create two system groups identifying the CICS systems to be used by WLM as routing regions and target regions, and a third group that contains all CICS systems used by the application. Click **System groups** to access the System group definitions tabular view.

1. Click **Create** to create a new system group definition. Type the name of the system group (MANUAORS) and a description. Click **Yes** to create a new CSYSGRP resource. Repeat to create system groups MANUTORS and MANUFACT. See Figure 4-4.

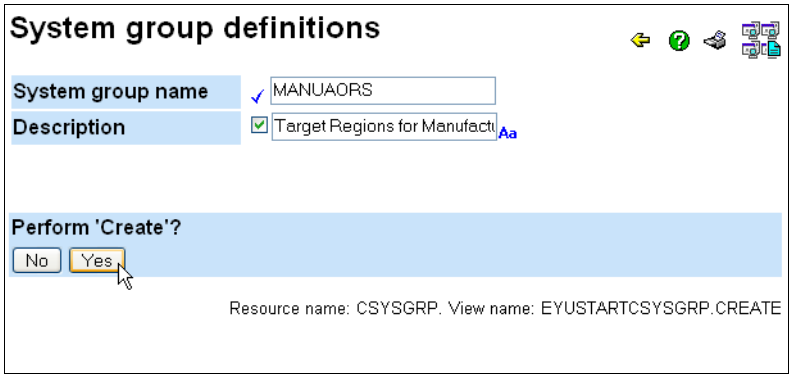


Figure 4-4 Create a system group definition

2. Add groups MANUAORS and MANUTORS to MANUFACT.

3. Select **MANUAORS** and **MANUTORS** by clicking their check boxes. Click **Add to CICS system group**. See Figure 4-5.

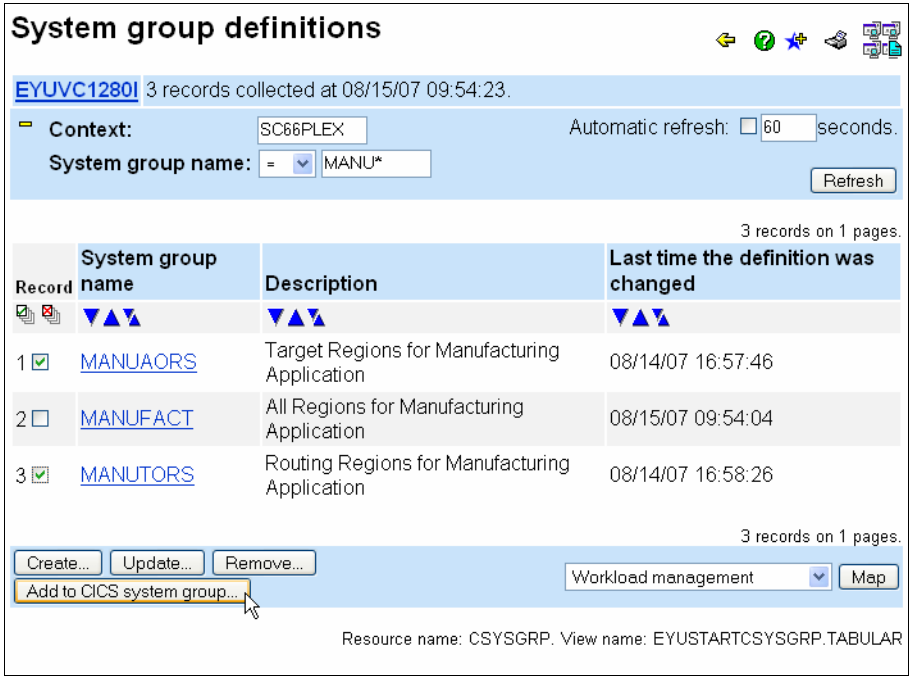


Figure 4-5 System group definitions

4. Clicking the pencil icon next to the Group which member will join text box displays a pick list of defined CSYSGRP resources. The list can be limited by entering a generic key. See Figure 4-6.

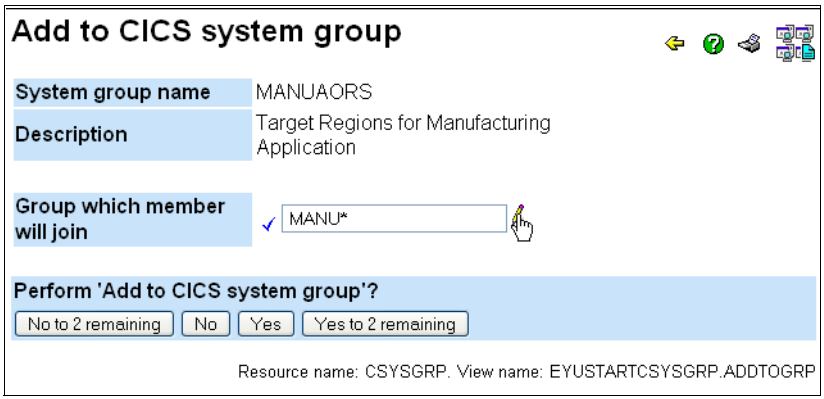


Figure 4-6 Request pick list of available resources

5. Select the desired resource (**MANUFACT**) and click **OK** (Figure 4-7). The resource name is entered into the Group which member will join text box.

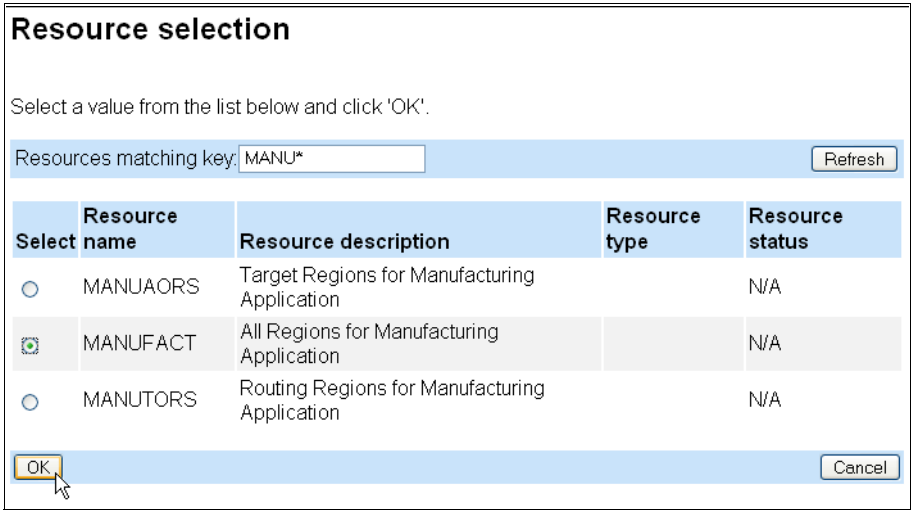


Figure 4-7 Resource selection pick list

6. Click **Yes to 2 remaining** to add MANUAORS and MANUTORS to system group MANUFACT. See Figure 4-8.

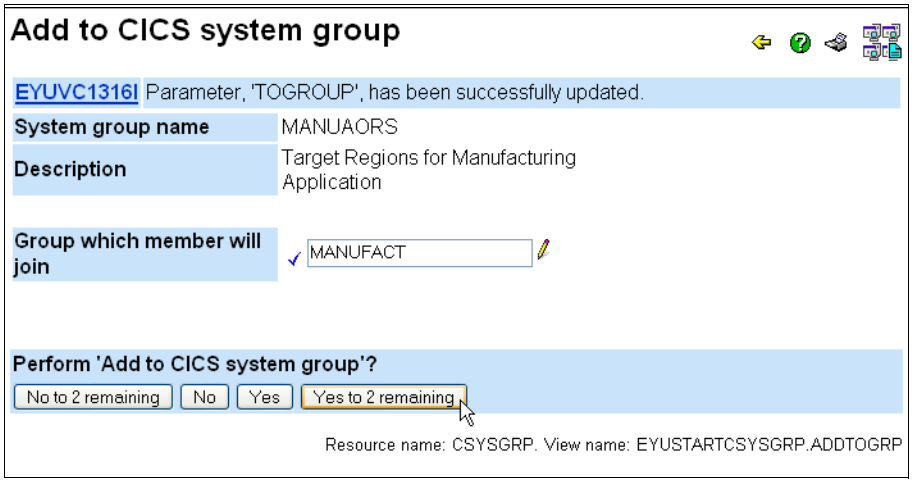


Figure 4-8 Add to CICS system group confirmation panel

Table 4-1 Action buttons for Add to CICS system group

Action button	Description
No to 2 remaining	Do not add the two remaining system groups to system group MANUFACT.
No	Do not add the named CICS system group to system group MANUFACT. Continue with the next selected system group.
Yes	Add the named CICS system group to system group MANUFACT. Continue with the next selected system group.
Yes to 2 remaining	Add the two remaining system groups to system group MANUFACT.

7. Now add the CICS systems that will be used as routing regions to system group MANUTORS, and the CICS systems that will be used as target regions to system group MANUAORS. Systems added to either of those groups will be automatically inherited by system group MANUFACT. Click the Return to previous menu icon ( ) in the current window's information frame to return to the Topology administration views menu. Click **CICS system definitions** to add CICS systems to our system groups.

8. Systems SCSCPAA1 and SCSCPAA4 will be target regions for the new application. Select these definitions by clicking their check boxes, and click **Add to CICS system group**. See Figure 4-9.

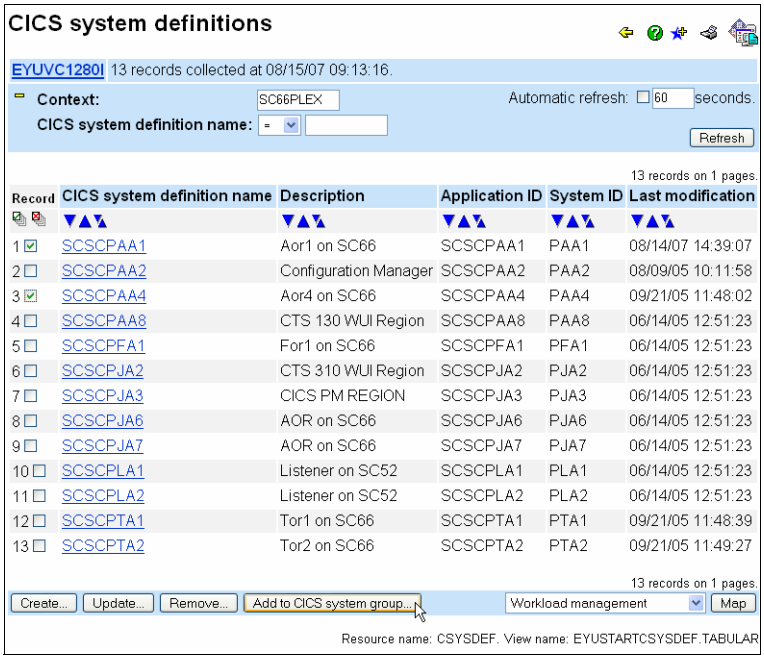


Figure 4-9 CICS system definitions

9. Click the pencil icon to display a pick list of available CICS system groups (Figure 4-7 on page 107). Select **MANUAORS** and click the **OK** button. The three inheritance list boxes control whether newly added CICS systems will inherit monitoring (MON), Real Time Analysis (RTA), and Workload Management (WLM) specifications that are associated with the CICS system group. You do not need to change the defaults at this time. Click **Yes to 2 remaining** to add the target regions to CICS system group MANUAORS (Figure 4-10). Repeat to add the routing regions, CICS systems SCSCPTA1 and SCSCPTA2, to CICS system group MANUTORS.

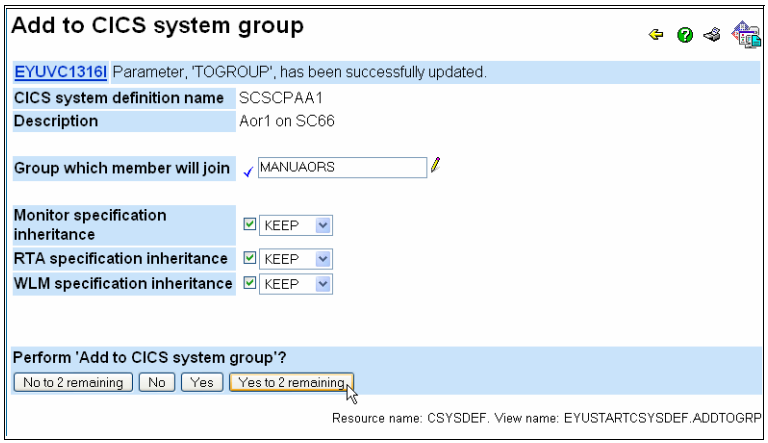


Figure 4-10 Add to CICS system group confirmation panel

You have created the necessary definitions to identify CICS systems that will be used as routing regions, where users will enter transactions, and target regions, where the transactions will execute.

4.1.2 Defining workload resources using Business Application Services

You must now extract the necessary resource definitions from the CICS CSD and create corresponding Business Application Services (BAS) definitions. You also need to create the definitions that control installation of the resources in the proper CICS systems. Use the CPSM resource extraction exit, EYU9BCSD, to extract resource definitions for the existing sample application from the CICS CSD. This exit creates a command stream for the CPSM Batched Repository Update (BATCHREP) feature. The job to extract resource definitions in RDO group ITSO is shown in Example 4-1.

Example 4-1 Job to extract resource definitions from the CICS CSD

```
//CICSRS3X JOB ,CLASS=A,MSGCLASS=X,NOTIFY=&SYSUID
//*-------------------------------------------------
//* DELETE ANY OUTPUT FROM A PREVIOUS RUN OF THIS JOB
//*-------------------------------------------------
//BR14OUT  EXEC PGM=IEFBR14
//EYUOUT    DD  DISP=(MOD,DELETE,DELETE),UNIT=SYSDA,
//              DSN=CICSRS6.EYUOUT.EXAMPLE,
//              SPACE=(TRK,(1,1))
//*-------------------------------------------------
//* EXTRACT THE DEFINITONS FROM THE CSD
//*-------------------------------------------------
//CSDXTRCT EXEC PGM=DFHCSDUP,REGION=0M,
//              COND=(0,NE),
//              PARM='CSD(READONLY)'
//STEPLIB  DD DISP=SHR,DSN=CICSTS32.CICS.SDFHLOAD
//         DD DISP=SHR,DSN=CICSTS32.CPSM.SEYUAUTH
//DFHCSD   DD DISP=SHR,DSN=CICSSYSF.CICSVS32.DFHCSD
//EYUOUT   DD DISP=(,CATLG,DELETE),UNIT=SYSDA,
//              DSN=CICSRS6.EYUOUT.EXAMPLE,
//              SPACE=(TRK,(1,5))
//SYSPRINT DD SYSOUT=*
//SYSIN    DD *
 LIST                          OBJECTS GROUP(ITSO)
 EXTRACT USERPROGRAM(EYU9BCSD) OBJECTS GROUP(ITSO)
/*
//EYUIN    DD *
 RESGROUP(ITSO)
 RESINGRP(CSDGROUP)
 PROGRAM(*)
 TRANSACTION(*)
 DB2CONN(*)
 DB2ENTRY(*)
 DB2TRAN(*)
/*
//*-------------------------------------------------
```

```
//* LIST EYUOUT TO VIEW ERRORS
//*-------------------------------------------------
//LISTOUT  EXEC PGM=IEBGENER
//SYSUT1    DD DISP=OLD,DSN=CICSRS6.EYUOUT.EXAMPLE
//SYSUT2    DD SYSOUT=*
//SYSPRINT  DD SYSOUT=*
//SYSIN     DD DUMMY
```

The output of this job, captured in data set CICSRS6.EYUOUT.EXAMPLE, contains the necessary commands to recreate the resource definitions in the CPSM data repository. However, the data set must be edited to add a valid CONTEXT command, because this information is not stored in the CSD. (See Example 4-2.) You might also want to add an OPTION command to let the stream be rerun if processing is interrupted.

Example 4-2 Edited output of resource extraction job (first 20 lines displayed)

```
  CONTEXT SC66PLEX ;          /*  INSERTED */
  OPTION  DUPREC UPDATE ;     /*  UPDATE IF RESOURCE ALREADY EXISTS */
/*
   RESGROUP(ITSO)
   RESINGRP(CSDGROUP)
   PROGRAM(*)
   TRANSACTION(*)
   DB2CONN(*)
   DB2ENTRY(*)
   DB2TRAN(*)
*/
  CREATE RESGROUP     RESGROUP(ITSO)
                    DESCRIPTION( )
                               ;
  CREATE PROGDEF           NAME(MANUFACL)
                    DESCRIPTION(APPLICATION SAMPLE FOR COBOL FOR ITSO RED
BOOK PROJECT)
                       LANGUAGE(COBOL)
                         RELOAD(NO)
                       RESIDENT(NO)
```

Note that long attribute values, for example, descriptions, are split at column 72 and resume in column 1 of the next record. While EYU9BCSD does not generate sequence numbers, user-written BATCHREP command streams might contain sequence numbers in columns 73–80.

To load these definitions into the CPSM data repository:

1. Click **Batched repository update requests** from the Administration views menu (Figure 4-2 on page 103). To execute a BATCHREP stream, select the stopped process by clicking the check box, and click **Execute** (Figure 4-11).

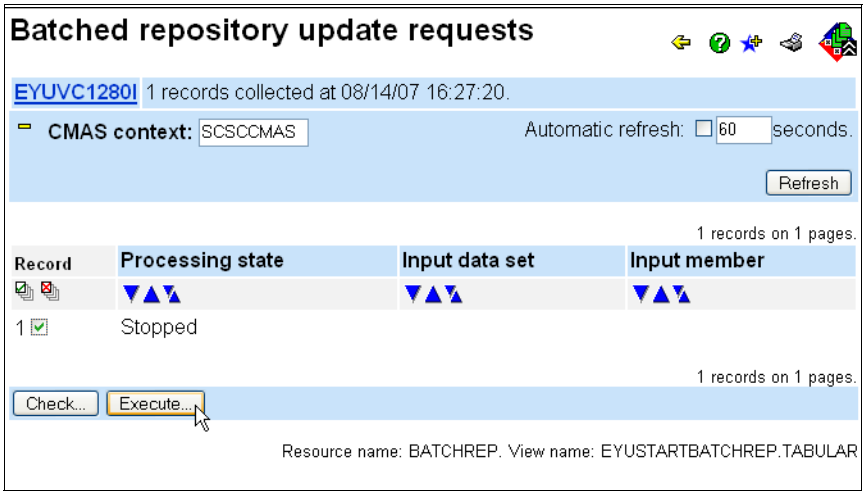


Figure 4-11 Batched repository update requests view

2. Enter the full data set name and optional member name from which the input stream will be read. (In this example our input is in a sequential data set so Input member name is left blank.) Output and messages will be written to a SYSOUT class. Enter the print class, print node, and destination user ID for BATCHREP output. It will be displayed in the CMAS joblog, and can be viewed by a spool display tool.

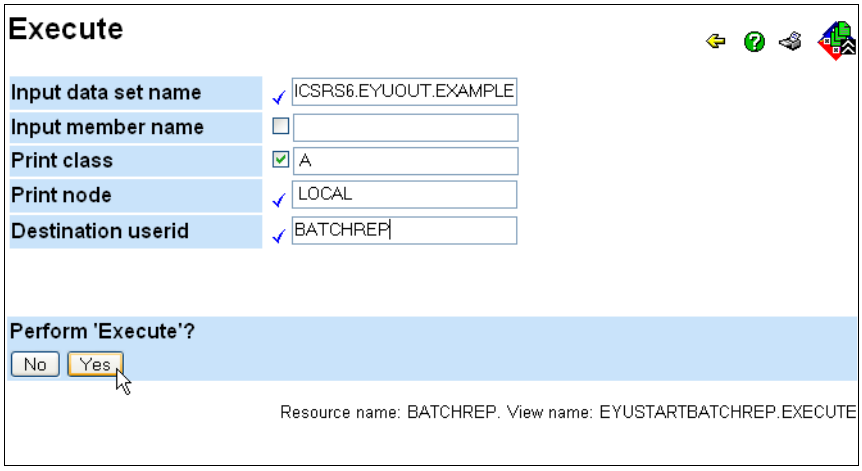


Figure 4-12 Enter BATCHREP execution parameters

3. To confirm creation of the desired resources, click **Fully functional Business Application Services (BAS) administration views** in the Administration views menu (Figure 4-2 on page 103).

4. From the BAS administration views menu (Figure 4-13), click **Resource groups** for a list of RESGROUP definitions in the CPSM data repository.

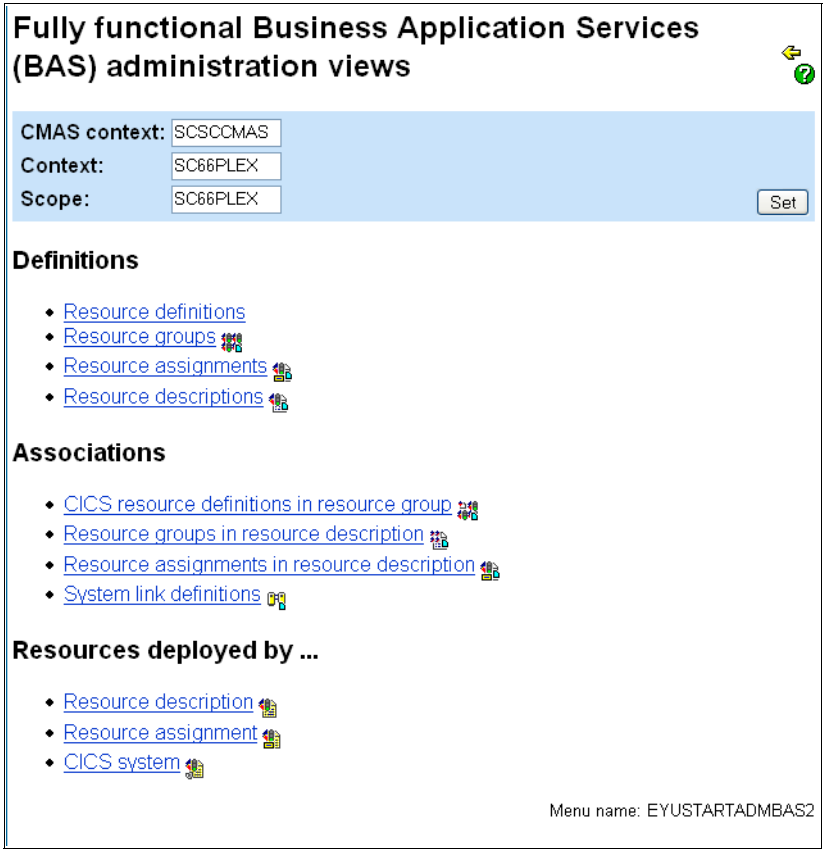


Figure 4-13 Fully functional Business Application Services (BAS) administration views

5. Click the hyperlink for **ITSO** to display the detailed form (Figure 4-14).

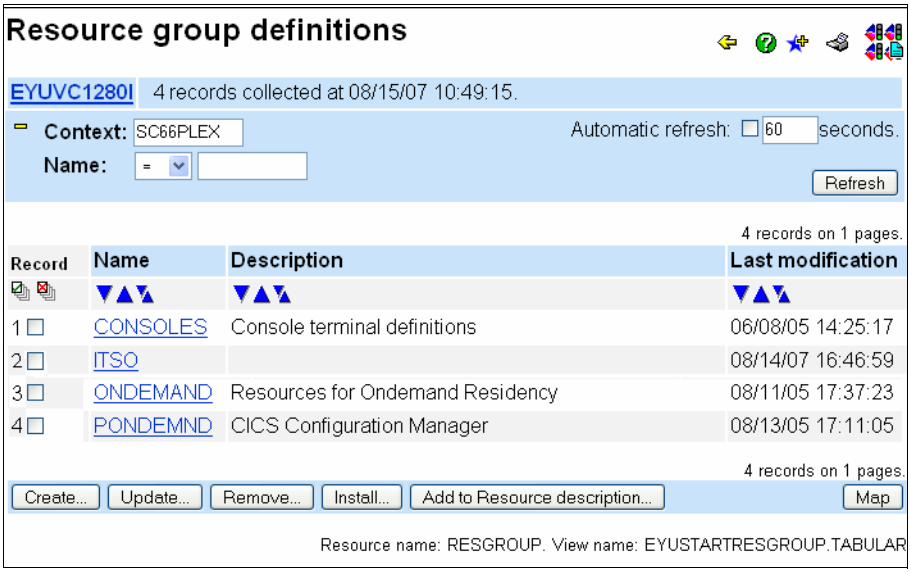


Figure 4-14 Resource group definitions view

6. Click **CICS resources with which this is associated** to display all resource definitions created by the BATCHREP stream (Figure 4-15).

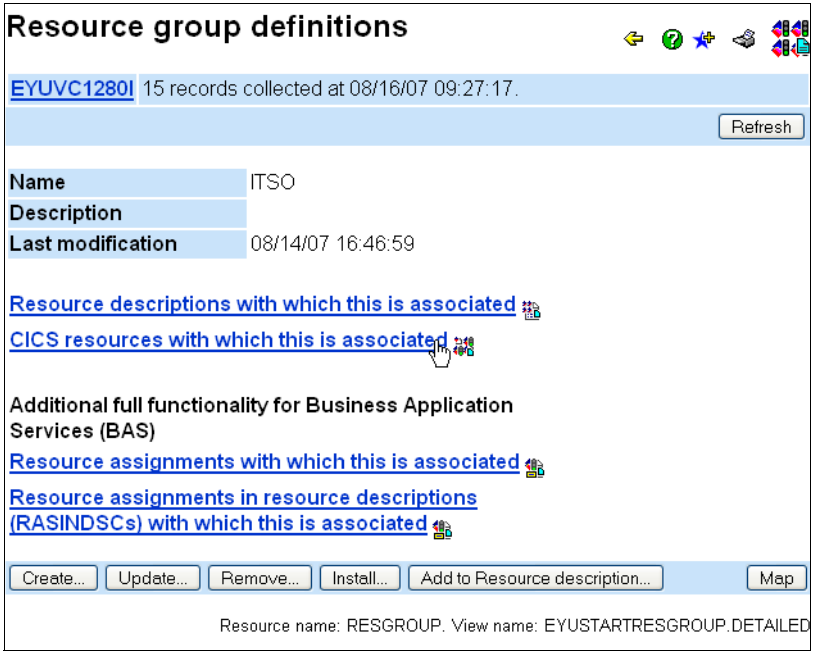


Figure 4-15 Detailed form of Resource group definitions view

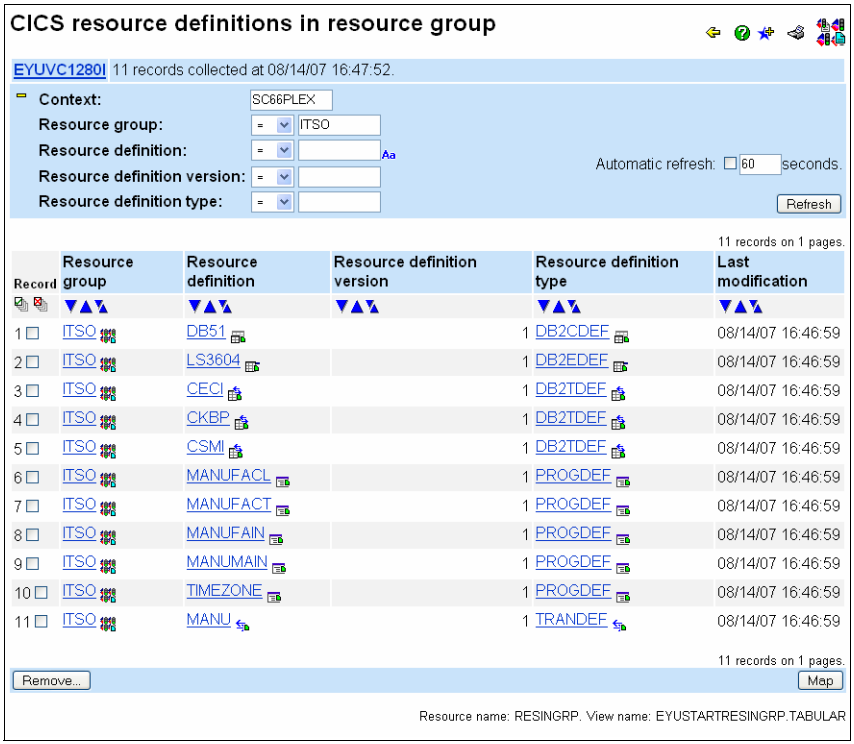


Figure 4-16 CICS resource definitions in resource group ITSO

Next, you must create a resource description (RESDESC) that controls the installation of resources in CICS systems.

1. From the BAS administration views menu (Figure 4-13 on page 115) click Resource descriptions. In the Resource descriptions window, click **Create**. The Create resource description definitions panel (Figure 4-17) is displayed.

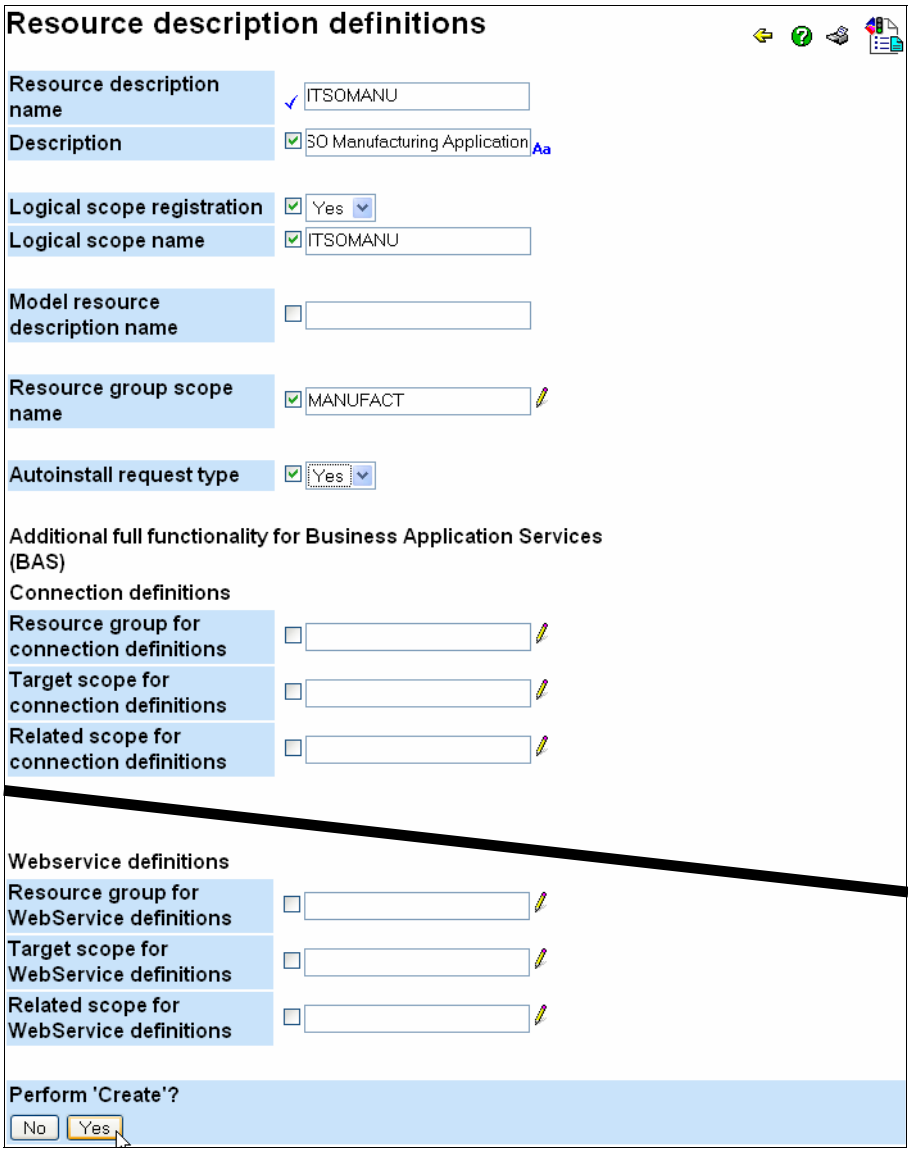


Figure 4-17 Create resource description definitions (condensed)

2. Enter the name of the new resource description definition and its description.
3. Create a logical scope to let us display resources belonging to this application in all systems where they are installed. Select **Yes** for logical scope registration and type a name for the logical scope.
4. Type (or select from a pick list) the default scope for associated resource groups.
5. Select **Yes** for autoinstall request type.
6. Scroll to the bottom of the Resource description definitions panel and click **Yes** to create the resource description. Resource description ITSOMANU is displayed in the tabular form of the Resource description definitions view. See Figure 4-18.

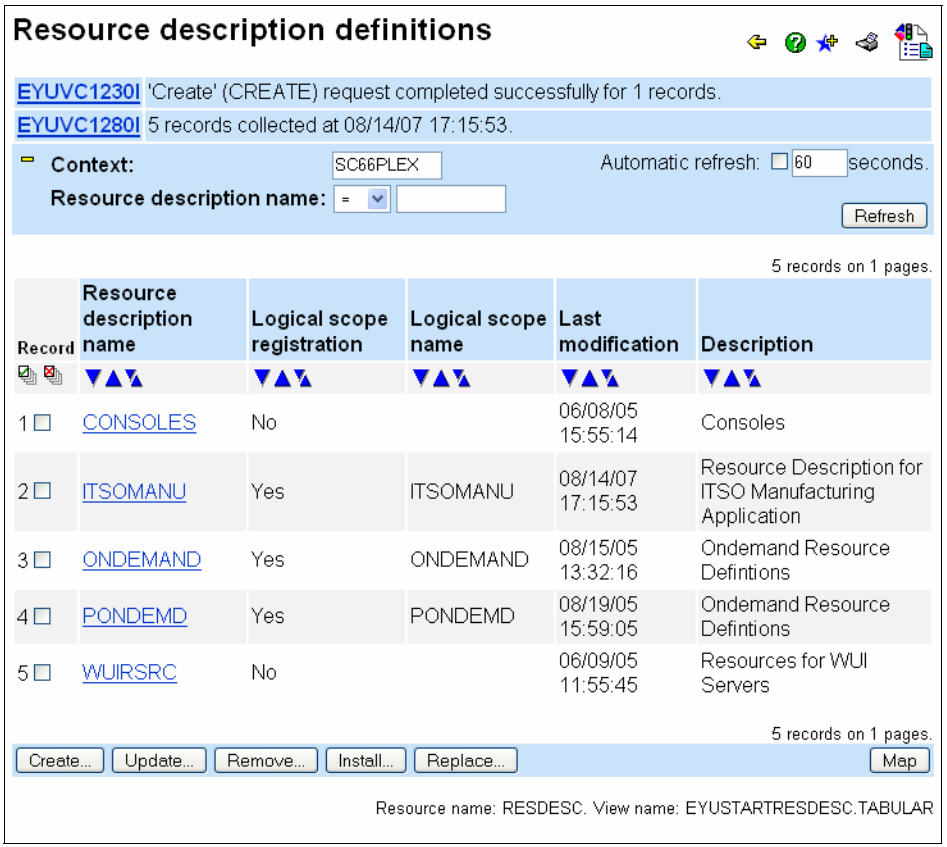


Figure 4-18 Resource description definitions view

You must now associate each of the defined resources with the CICS systems in which it will be installed. Programs must be installed in the target regions only.

Transactions must be installed as dynamically routed remote transactions in the routing regions and as local transactions in the target regions. The DB2® resources must be installed in both routing regions and target regions.

1. Define the installation requirements for programs and transactions by creating Resource Assignment Definitions (RASGNDEFs). From the BAS administration views menu (Figure 4-13 on page 115) click **Resource assignments**. Click **Create**.

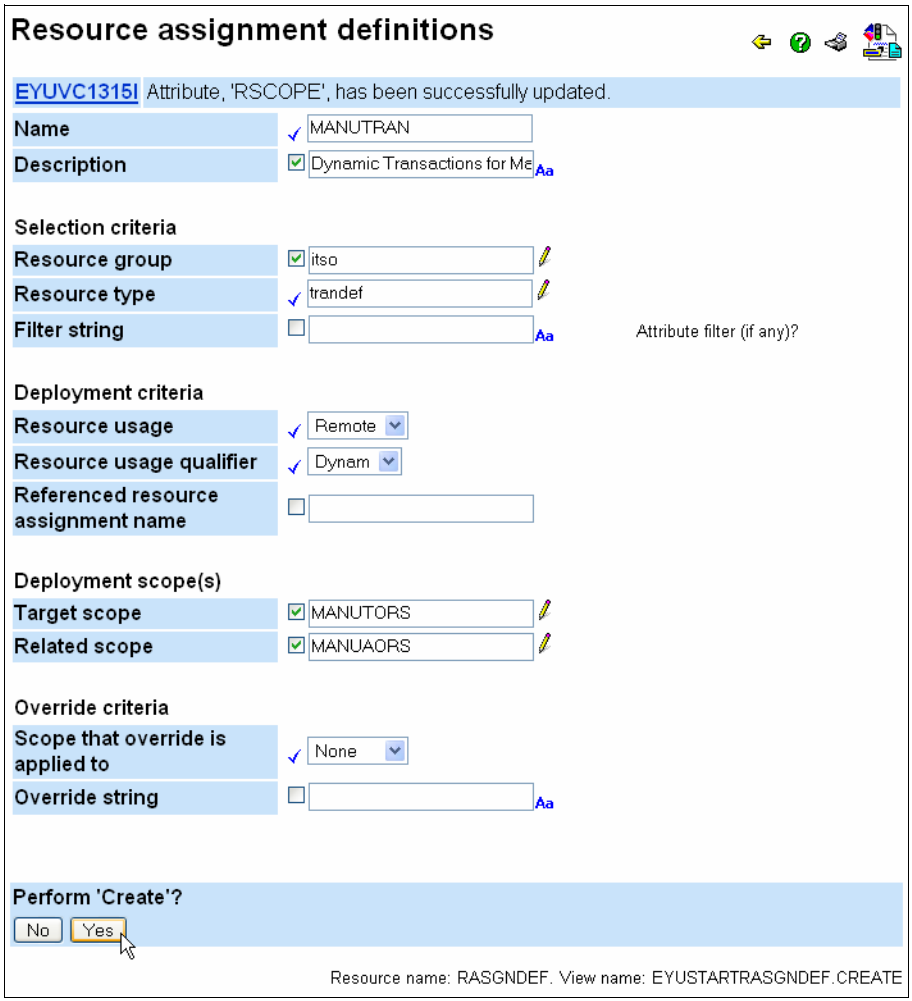


Figure 4-19 Create resource assignment definition for transactions

2. Enter a name and description for this resource assignment.
3. Type (or select from a pick list) the resource group name (ITSO).

4. Type (or select from a pick list) the resource type to be processed (TRANDEF).
5. Because this resource assignment will be used to install transactions which will be dynamically routed by WLM, select **Remote** for resource usage and **Dynamic** for resource usage qualifier.
6. The target scope identifies CICS systems in which the transactions will be installed as remote transactions, that is, routing regions or TORs. Enter (or select from a pick list) **MANUTORS**.
7. The related scope identifies CICS systems in which the transactions will be installed as local transactions, that is, target regions or AORs. Enter (or select from a pick list) **MANUAORS**.
8. You do not need to override any transaction attributes in the target or related scopes.

9. Click **Yes** to create the new resource assignment definition (Figure 4-20).
10. Click **Create** again to create a resource assignment for programs.

Figure 4-20 Create resource assignment definition for programs

11. Enter a name and description for this resource assignment.
12. Type (or select from a pick list) the resource group name (ITSO).
13. Type (or select from a pick list) the resource type to be processed (PROGDEF).
14. Because this resource assignment will be used to install programs that will execute in the same system in which they are invoked, select **Local** for resource usage and **N_a** for resource usage qualifier.

15. The target scope identifies CICS systems in which the programs will be installed. Enter (or select from a pick list) **MANUAORS**.

    Again, you do not need to override any transaction attributes.

16. Click **Yes** to create the new resource assignment definition.

17. Associate the resource assignments with a resource description so that resources are installed in the appropriate systems automatically. In the resource assignment definitions window (Figure 4-21) select the two resource assignments, MANUPROG and MANUTRAN, by clicking their check boxes. Click **Add to resource description**.

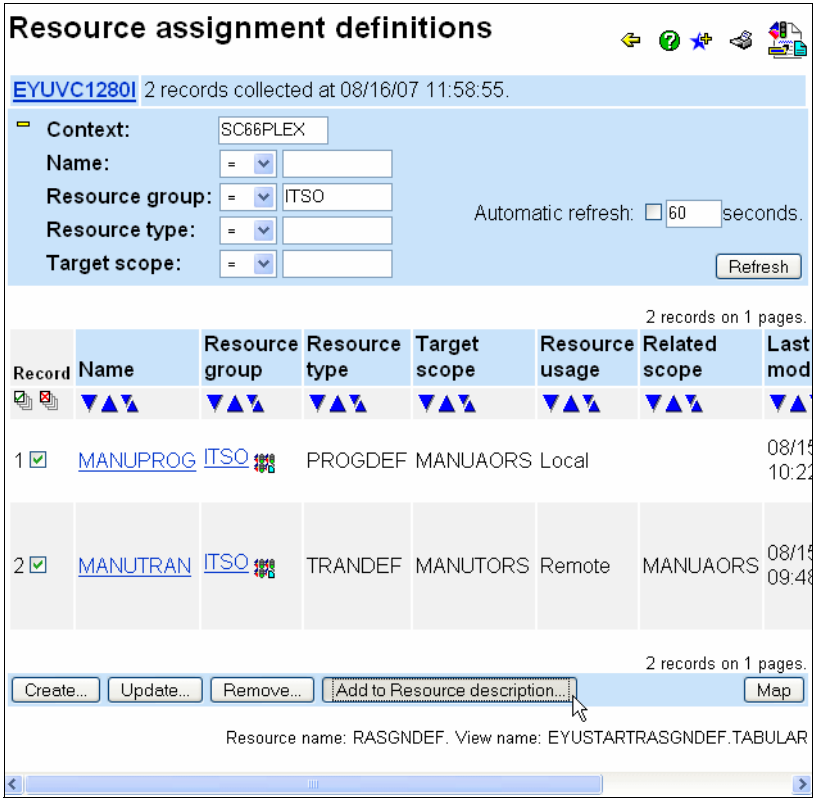


Figure 4-21 Resource assignment definitions view

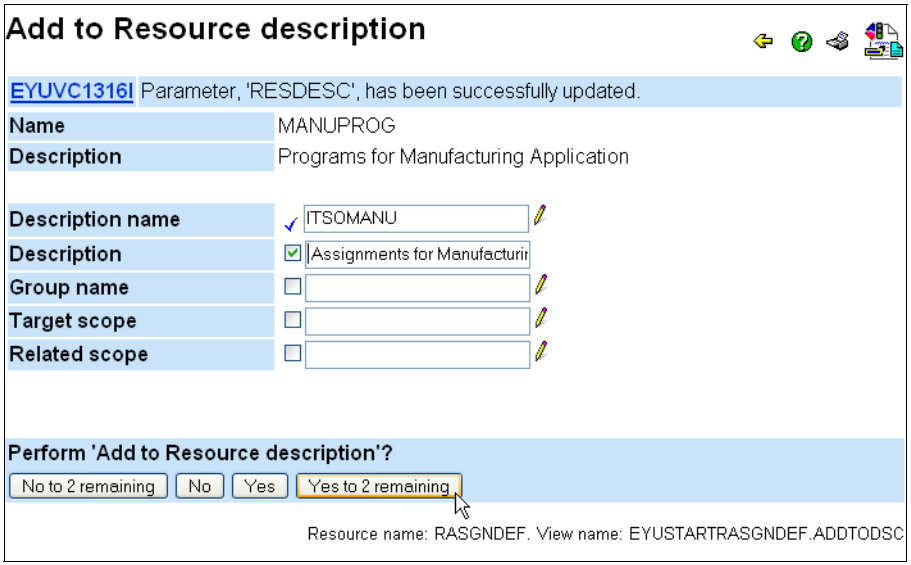


Figure 4-22 Add resource assignment to resource description

18. Type (or select from a pick list) the name of the application's resource description, **ITSOMANU**. Optionally type a description that will appear in WUI displays. Since the two resource assignments have different installation scopes, you should not set group name, target scope, or related scope here. Click **Yes to 2 remaining** to add both resource assignments to the resource description.

    You could create resource assignments to assign an install scope for each of the DB2 resource types, but rather than creating three additional resource assignments, you can associate a resource group containing the DB2 resources with the application's resource description so they will be installed in the systems of the resource group scope named in the resource description.

    However, you cannot associate resource group ITSO with the resource description, because that would cause the transactions and programs to be installed in the same scope. Since we have already defined install scopes for transactions (in resource assignment MANUTRAN) and programs (in resource assignment MANUPROG), BAS returns an inconsistent scope exception if you try to create a direct association between resource group ITSO and resource description ITSOMANU. Instead, you must create a new resource group containing only the DB2 resources, and associate that group with the resource description.

19. From the BAS administration views menu (Figure 4-13 on page 115) click **Resource groups**. In the Resource groups window, click **Create**.

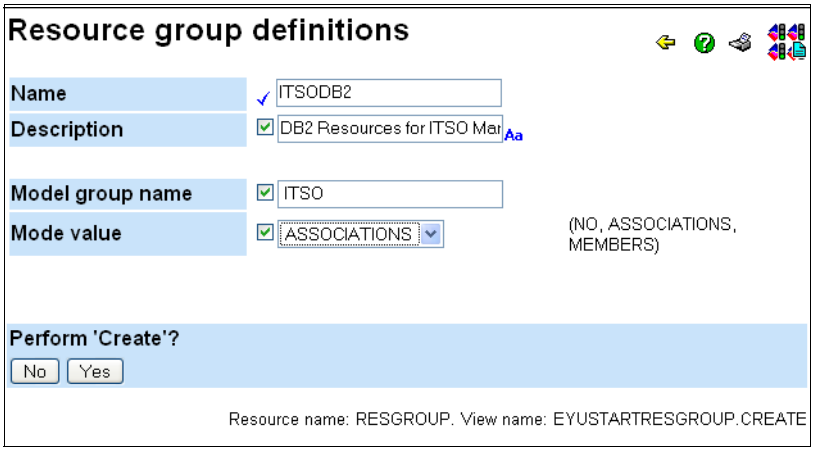


Figure 4-23 Create resource group definitions

20. Type a name and description for the new resource group.
21. This resource group will be modelled on the original ITSO group.
22. It is only necessary to duplicate the associations between resource definitions and the resource group, not to create copies of the resource definitions themselves.
23. Click **Yes** to create the new resource group and associations.
24. You must now remove the associations with program and transaction resources from resource group ITSODB2. Click the hyperlink for **ITSODB2** to display the detailed form.

25. Click **CICS resources with which this is associated** to display all associated resource definitions (Figure 4-24).

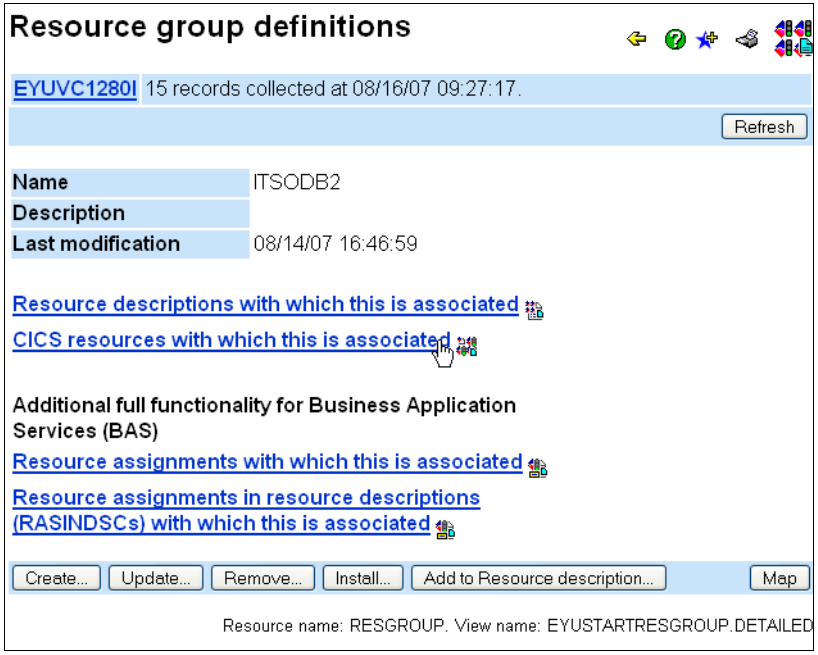


Figure 4-24 Detailed form of Resource group definitions view (reprise)

26. Select each of the PROGDEF and TRANDEF resource associations by clicking their check boxes, then click **Remove**. See Figure 4-25.

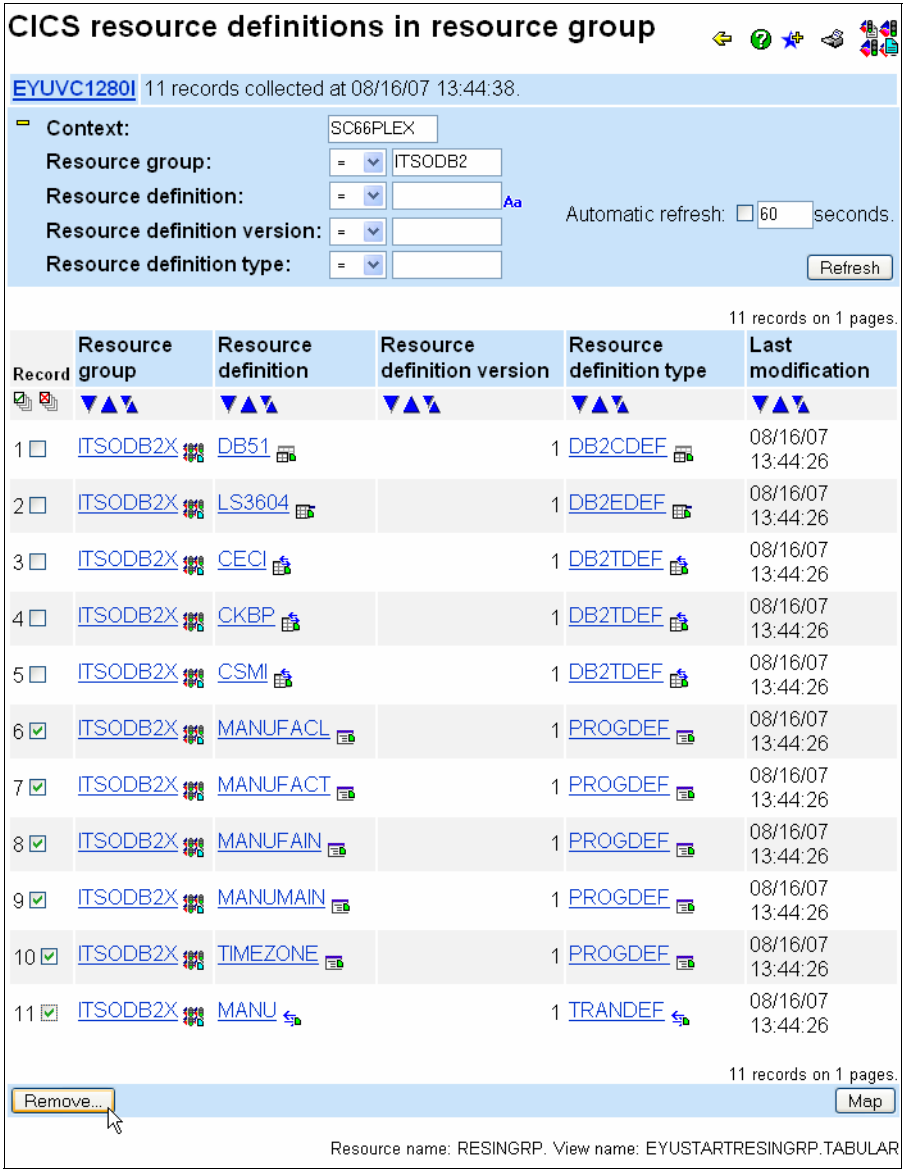


Figure 4-25 CICS resources in resource group ITSODB2

27. Click **Yes to 6 remaining** to remove the unwanted resources (Figure 4-26).

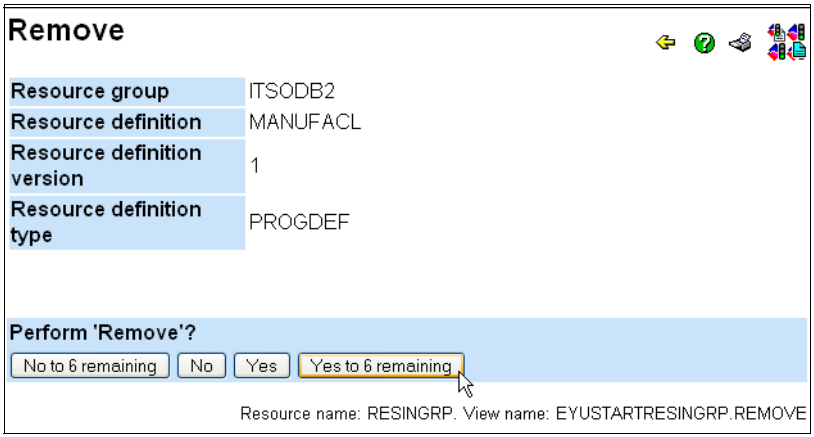


Figure 4-26 Remove resources from resource group

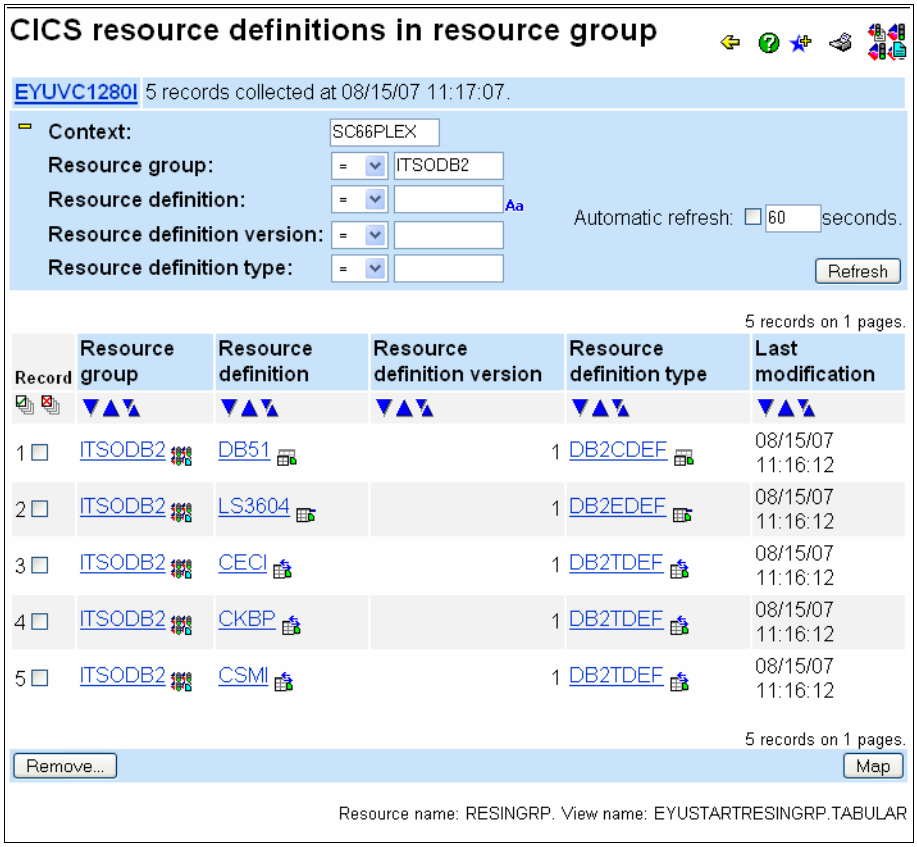


Figure 4-27 CICS resource definitions in resource group ITSODB2 after selection

28. It is now possible to add resource group ITSODB2 to the application's resource description without receiving an inconsistent scope exception for the programs and transactions. Click the Return to previous window icon ( ) until the Resource group definitions tabular view is displayed.

29. Select resource group ITSODB2 by clicking the check box. Click **Add to Resource description** (Figure 4-28).

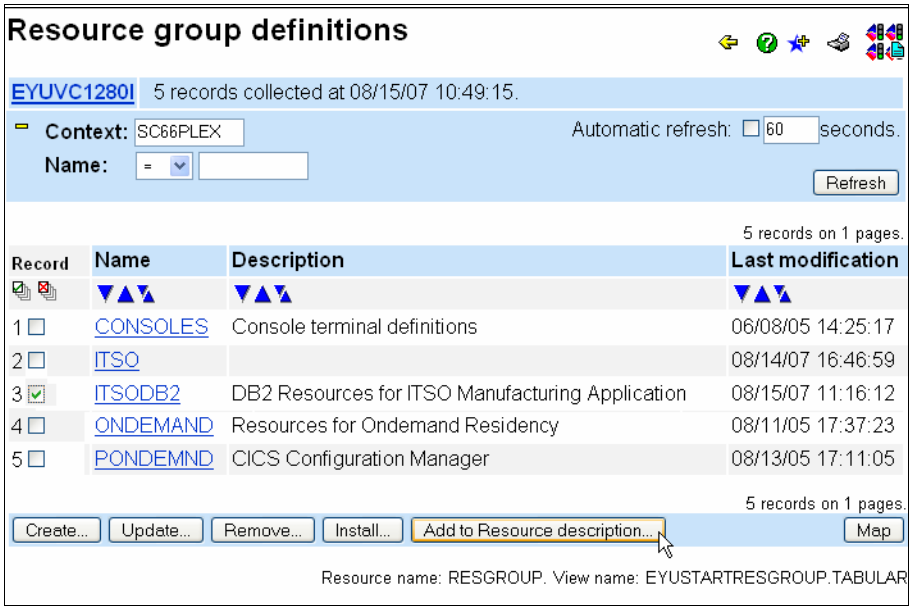


Figure 4-28 Resource group definitions (reprise)

30. Type (or select from a pick list) resource description `ITSOMANU`. Click **Yes** to add resource group ITSODB2 to resource description ITSOMANU (Figure 4-29).

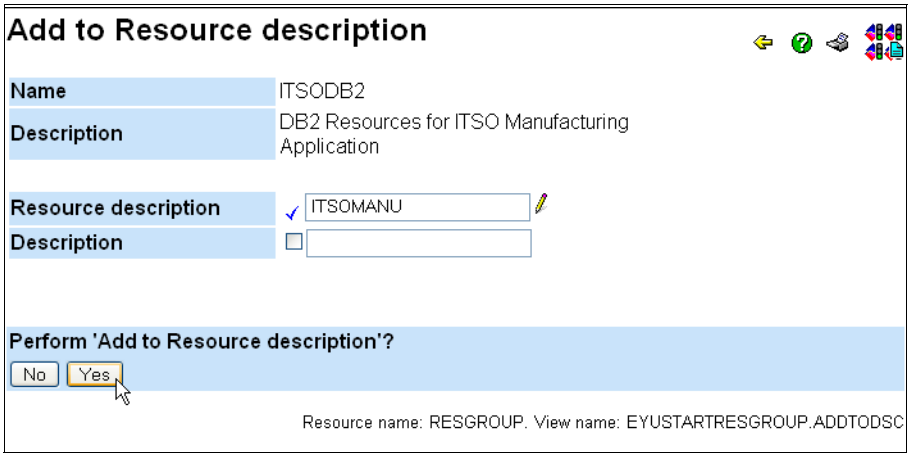


Figure 4-29 Add Resource group to Resource description

31. You have created all the definitions necessary to define the resources for your sample application, and to install those resources in CICS systems when the systems connect to a CICSplex at startup. To verify the installation configuration, examine the information displayed in the Resources selected by resource descriptions view. From the BAS administration views menu (Figure 4-13 on page 115) click **Resources deployed by ... Resource description**. Type the resource description name `ITSOMANU` in Resource description name, and click **Refresh**.

32. The resulting display contains 38 lines in two pages, and it would require scrolling both within and between pages to view all the resources. However, you can summarize the displayed lines and expand specific groups to see more information. Click the Summarize icon (▼▲) for resource definition type (Figure 4-30).

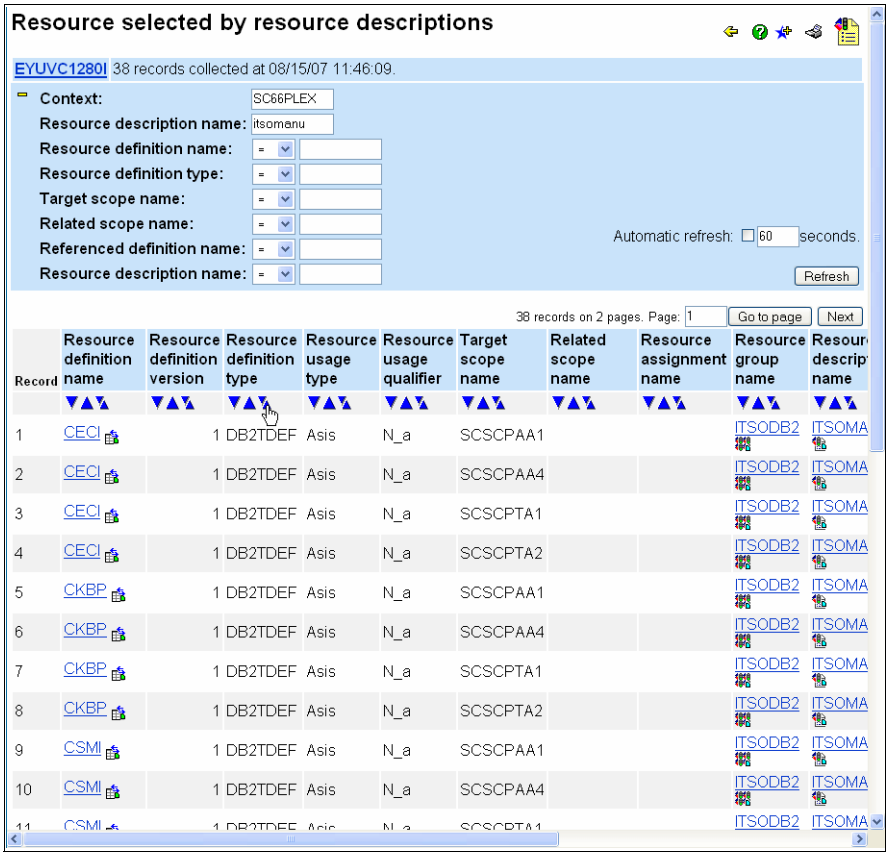
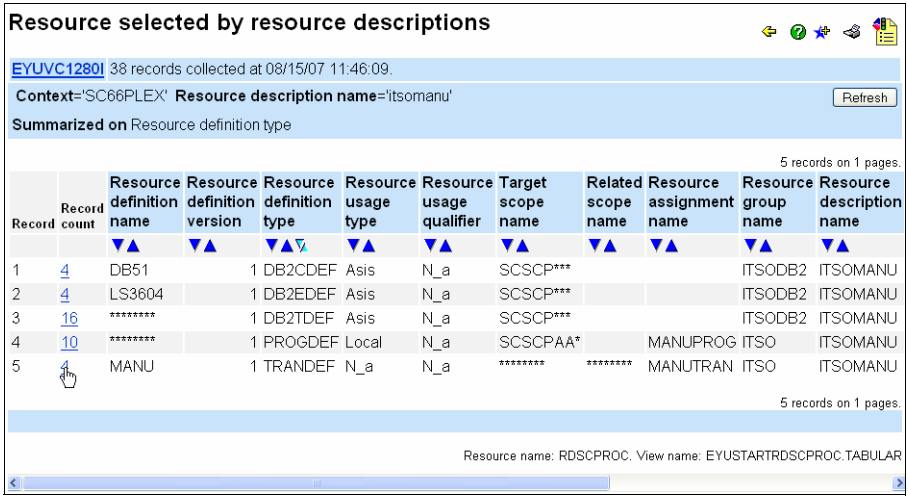


Figure 4-30 Resources selected by resource description ITSOMANU

33. To view the individual resources summarized in one line, click the **Record count** hyperlink (Figure 4-31).



Resource selected by resource descriptions

EYUVC1280I 38 records collected at 08/15/07 11:46:09.

Context='SC66PLEX' **Resource description name**='itsomanu' Refresh

Summarized on Resource definition type

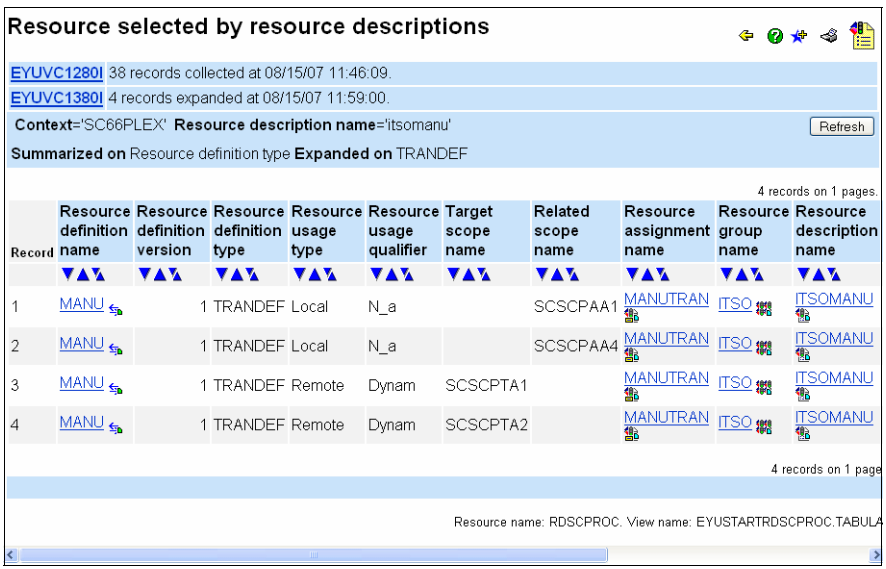
5 records on 1 pages.

Record	Record count	Resource definition name	Resource definition version	Resource definition type	Resource usage type	Resource usage qualifier	Target scope name	Related scope name	Resource assignment name	Resource group name	Resource description name
1	4	DB51	1	DB2CDEF	Asis	N_a	SCSCP***			ITSODB2	ITSOMANU
2	4	LS3604	1	DB2EDEF	Asis	N_a	SCSCP***			ITSODB2	ITSOMANU
3	16	********	1	DB2TDEF	Asis	N_a	SCSCP***			ITSODB2	ITSOMANU
4	10	********	1	PROGDEF	Local	N_a	SCSCPAA*		MANUPROG	ITSO	ITSOMANU
5	4	MANU	1	TRANDEF	N_a	N_a	********	********	MANUTRAN	ITSO	ITSOMANU

5 records on 1 pages.

Resource name: RDSCPROC. View name: EYUSTARTRDSCPROC.TABULAR

Figure 4-31 Resource selected by resource descriptions summarized on Resource type



Resource selected by resource descriptions

EYUVC1280I 38 records collected at 08/15/07 11:46:09.

EYUVC1380I 4 records expanded at 08/15/07 11:59:00.

Context='SC66PLEX' **Resource description name**='itsomanu' Refresh

Summarized on Resource definition type **Expanded on** TRANDEF

4 records on 1 pages.

Record	Resource definition name	Resource definition version	Resource definition type	Resource usage type	Resource usage qualifier	Target scope name	Related scope name	Resource assignment name	Resource group name	Resource description name
1	MANU	1	TRANDEF	Local	N_a		SCSCPAA1	MANUTRAN	ITSO	ITSOMANU
2	MANU	1	TRANDEF	Local	N_a		SCSCPAA4	MANUTRAN	ITSO	ITSOMANU
3	MANU	1	TRANDEF	Remote	Dynam	SCSCPTA1		MANUTRAN	ITSO	ITSOMANU
4	MANU	1	TRANDEF	Remote	Dynam	SCSCPTA2		MANUTRAN	ITSO	ITSOMANU

4 records on 1 page

Resource name: RDSCPROC. View name: EYUSTARTRDSCPROC.TABULA

Figure 4-32 Resources selected by resource description ITSOMANU for TRANDEF

34. Clicking the record count for TRANDEF expands that summary line to show that the TRANDEF for transaction MANU will be installed as a local transaction in systems SCSCPAA1 and SCSCPAA4, and as a remote

transaction in systems SCSCPTA1 and SCSCPTA2. Other resource types can be verified by clicking the Return to previous window icon ( ) to return to the summarized view, and expanding the summarized data for other resource types.

35. Although the resources that we have defined will be installed in the appropriate CICS system when they are next restarted, we can also install resources manually. Click **Resource descriptions** in the Fully functional Business Application Services (BAS) administration views menu (Figure 4-13 on page 115).

36. Select ITSOMANU by clicking the check box, and click **Install** (Figure 4-33).

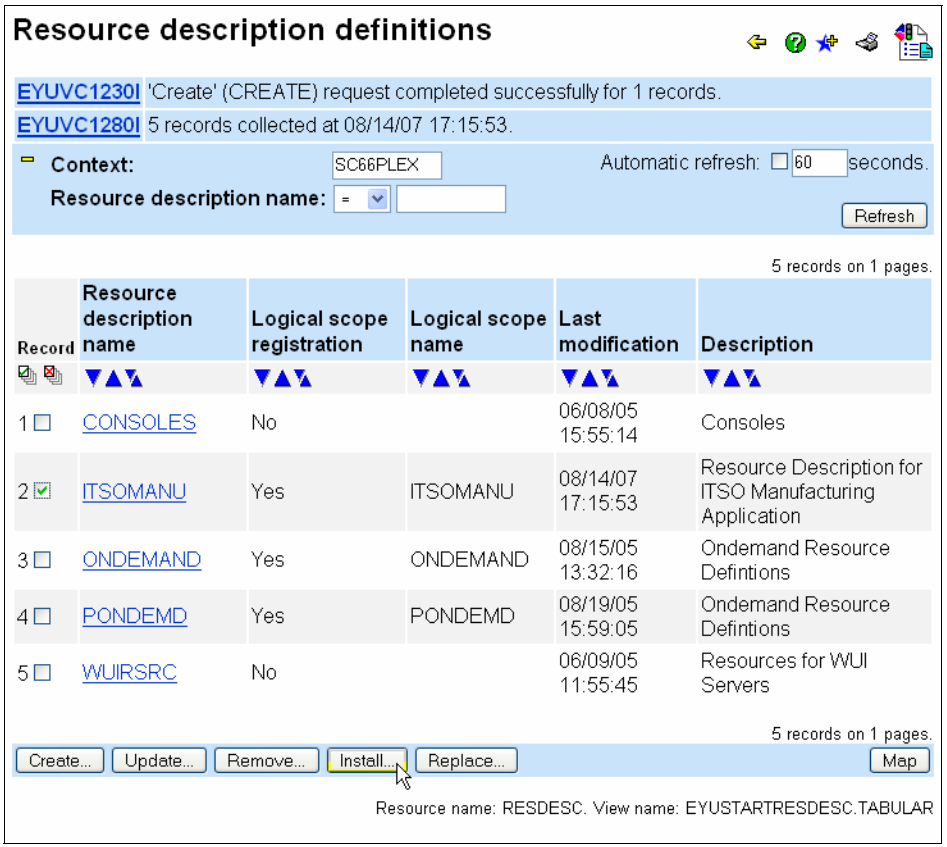


Figure 4-33 Resource description definitions view (reprise)

37. For a full explanation of the install option values, click the Field level help icon ( ) to display field level help for the Install Resource description panel. (See Figure 4-35 on page 137.)

    a. Set notify value to FULL.
    b. Set state check value to YES.
    c. Set force install value to NO.
    d. Click **Yes** to install resources associated with the resource description.

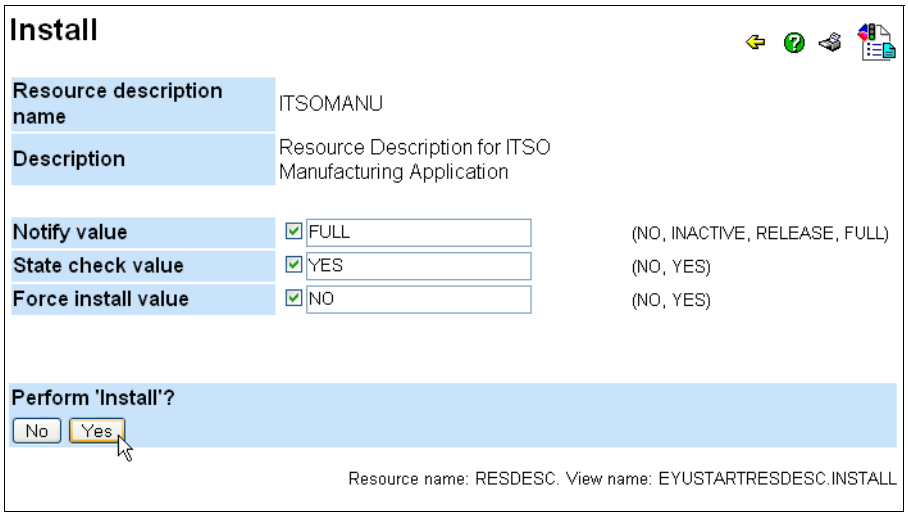


Figure 4-34 Install Resource description

See Figure 4-36 on page 138 for the Resource description definition view after the install has completed.

Install

Install the resources associated with a resource description into active CICS systems.

The **Resource description definitions** (RESDESC) views display information about sets of logically related resource definitions that can be installed in CICS systems that support resource installation or named as the scope for CICSPlex SM requests.

Fields

Title	Attribute	
Resource description name	RESDESC	The name of the resource description definition. **Format:** Advanced
Description	DESCRIPTION	A description of the resource description. **Format:** Advanced
Notify value	NOTIFY	Indicates the type of checking to be performed before attempting to install the resource in the specified CICS systems: • NO: No checking is performed. • INACTIVE: Check for systems that are not currently active. • RELEASE: Check for systems that do not support EXEC CICS • For CREATE commands. FULL: Perform both INACTIVE and RELEASE checking. If NOTIFY is not set to NO and the processing of the option reports back with problems, the INSTALL is not performed at all.
State check value	STATECHK	Indicates whether the existence and operational state of a resource should be checked before an EXEC CICS CREATE command is issued.
Force install value	FORCEINS	Indicates whether you want to install the resources even if CICSPlex SM believes they do not need to be installed.

Figure 4-35 Field level help for Install Resource description window

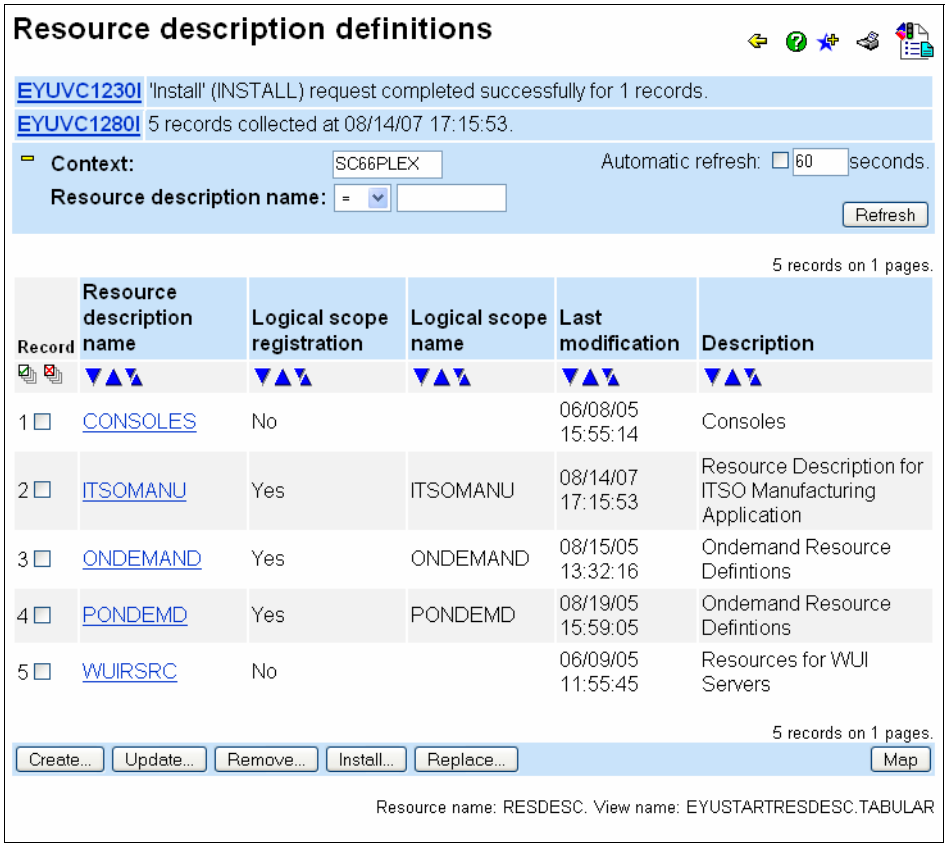


Figure 4-36 Resource description definitions view after successful install

4.1.3 Defining routing requirements using Workload Management

Figure 4-37 shows the workload definition process that is used for creating the workload definitions in the WUI.

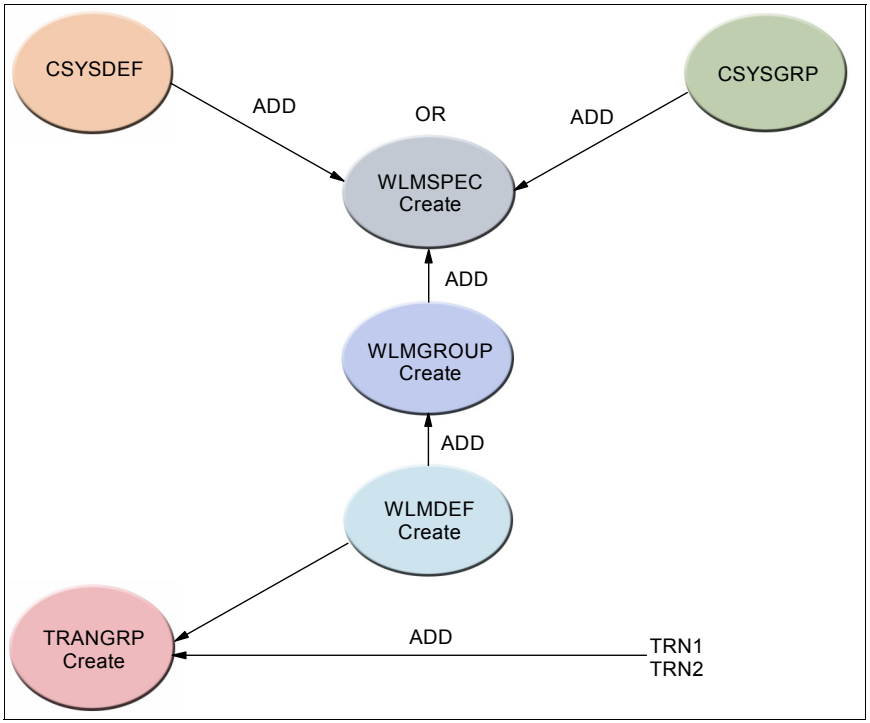


Figure 4-37 Workload definition process

Table 4-2 Workload management resource descriptions

Resource	Description
WLMSPEC	Identifies default characteristics and target AOR scope
WLMINSPC	Identifies WLMGROUPs associated with a WLMSPEC
WLMGROUP	Identifies WLMDEFs that may be manually installed as a separate entity
WLMINGRP	Identifies WLMDEFs associated with a WLMGROUP

Resource	Description
WLMDEF	Associates a transaction group with one or more CICS systems to which transactions will be routed
TRANGRP	Identifies a group of dynamic transactions with the same routing requirements
DTRINGRP	Associates a dynamic transaction with a TRANGRP

Creating the workload definition set with the WUI

Workload definitions are used to route transactions to a specific set of AORs based on terminals or user names associated with those transactions. The terminals and user names might be either specific or generic.

The current workload management specification, WLS3270, has been set up to enable dynamic transactions to run in all the CICS regions in group CSGALL. The sample manufacturing application has been set up to run in two other CICS regions. To create a workload for transaction routing there are five basic steps to be completed:

1. One or more transactions need to be added to a transaction group.
2. The transaction group needs to be named in one or more workload management definitions.
3. The workload management definitions need to be added to a workload management group.
4. The workload management group needs to be added to a workload management specification.
5. The workload management specification needs to be associated with one or more routing regions.

Figure 4-38 illustrates the relationship between the CICSPlex SM WLM components.

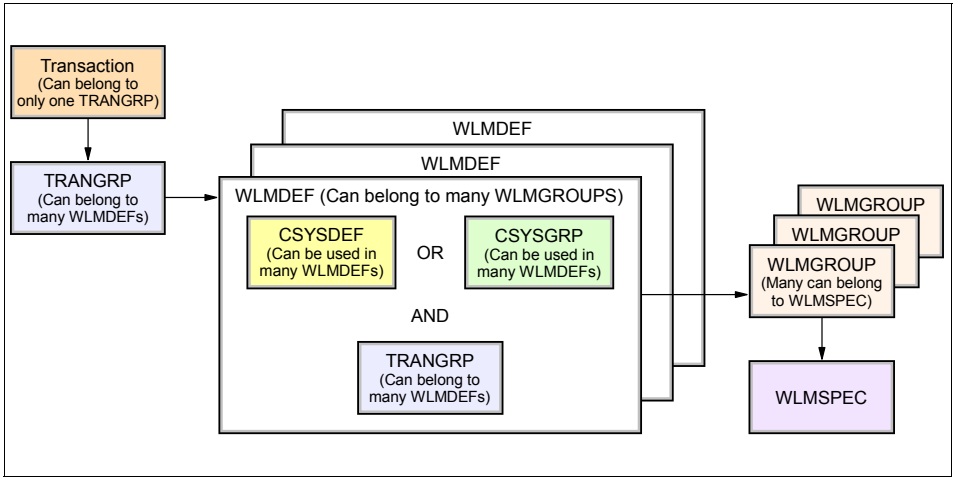


Figure 4-38 Relationship between the CICSPlex SM WLM components

From the Administration views menu (Figure 4-2 on page 103) click **Workload manager administration views** to create and update WLM resources. The Workload manager administration views menu is shown in Figure 4-39.

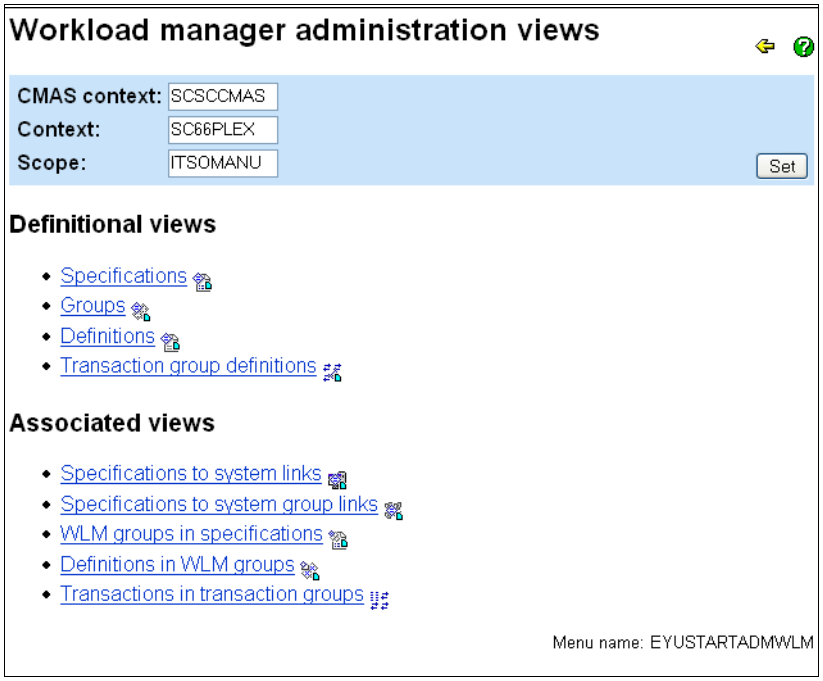


Figure 4-39 Workload manager administration views

Transaction group

A transaction group (TRANGRP) defines a set of transactions that have the same transaction routing requirements, that is, they are required to run in the same CICS regions. They might also have affinities that require that transactions in the transaction group must be routed to the same target region. To create a transaction group for the sample application click **Transaction group definitions** in the Workload manager administration views menu (Figure 4-39 on page 142). Click **Create** to define a new transaction group.

1. Type the transaction group name (`MANUTGRP`) and a description.
2. Affinity relation and lifetime checking are active.
3. Primary search criterion is userid.
4. Affinity relationship is userid.
5. Affinity lifetime is Pconv (Pseudoconversation).
6. Automatic affinity creation is Yes.
7. Click **Yes** to create the transaction group.

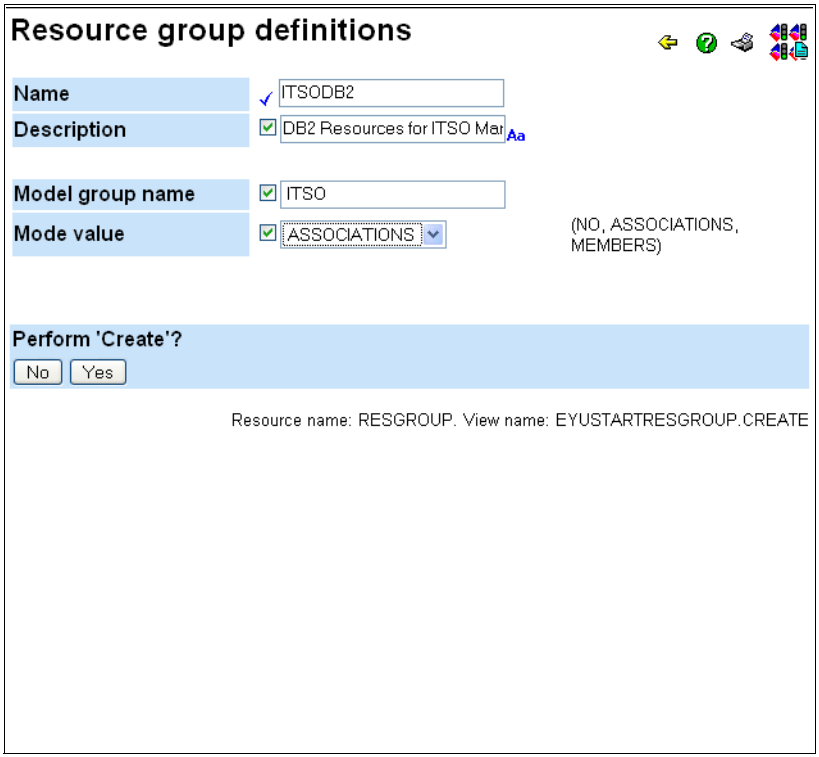


Figure 4-40 Create transaction group definition

Transaction MANU runs as a pseudoconversation. Each task identifies the next transaction to be invoked as a parameter of EXEC CICS RETURN. Because

state information is retained in the target region between instances of the pseudoconversation, transactions must be routed to the same target region until the pseudoconversation ends by returning to CICS without identifying the next transaction ID.

Our new transaction group is now displayed in the Transaction group definitions view. Select MANUTGRP by clicking the check box. Click **Add transaction** (Figure 4-41).

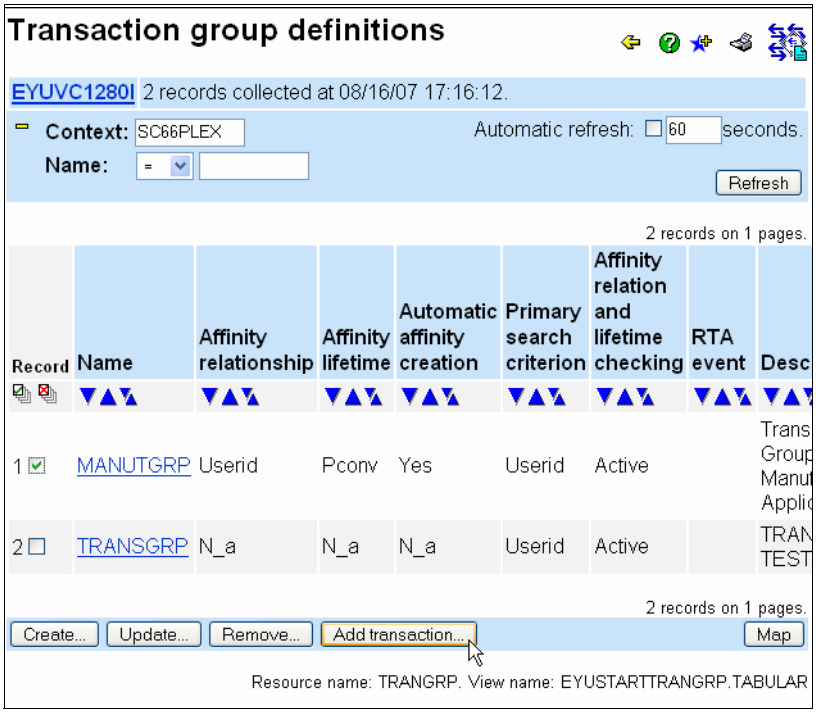


Figure 4-41 Transaction group definition view

For a pseudoconversational affinity you can identify a transaction that starts, and optionally ends, the pseudoconversation.

1. Enter the transaction name `MANU`.
2. Set pseudoconversation mode to START.
3. Click **Yes** to add to the transaction group.

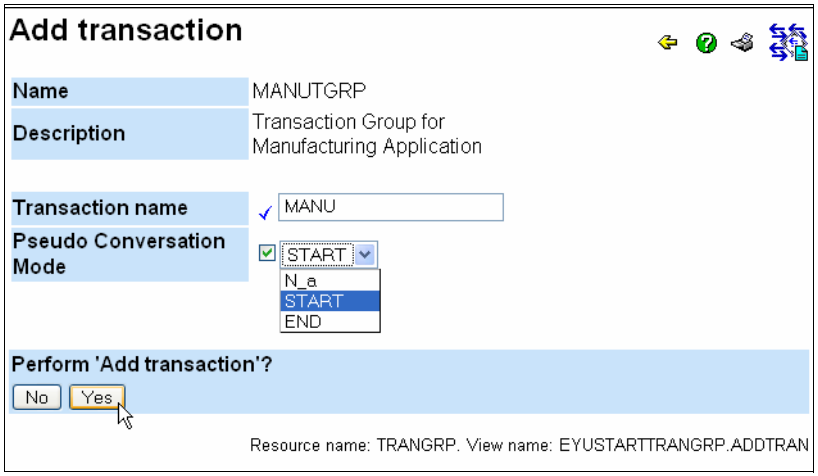


Figure 4-42 Add transaction to a transaction group

Because the transaction group only contains a single transaction, it is not necessary to identify a transaction to end the pseudoconversation.

From the Workload manager administration views menu (Figure 4-39 on page 142) click **Transactions in transaction groups**. Enter `MANUTGRP` in the Transaction group filter and click **Refresh**.

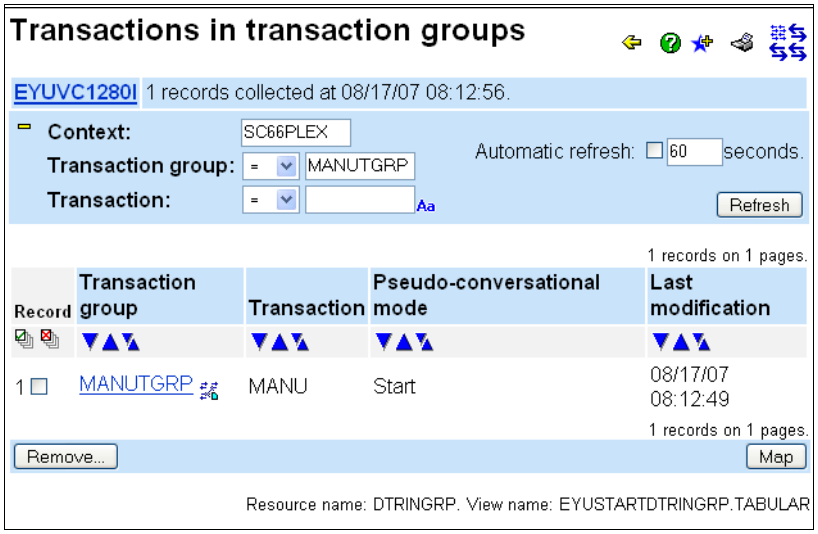


Figure 4-43 Transactions in transaction groups view

Workload management definition

A workload management definition (WLMDEF) is used to determine to which CICS regions a particular group of transactions is to be routed. If necessary you can route transactions to different regions, based upon the LUname or user ID under which the transaction is entered.

Click **Definitions** in the Workload manager administration views menu (Figure 4-39 on page 142). Click **Create** to define a new workload definition.

Type the workload definition name (MANUWDEF) and description:

1. Transaction group is `MANUTGRP`.
2. Scope name of set of target systems is `MANUAORS`.
3. The application does not require that you separate work by terminal LUname, user ID, or Business Transaction Services (BTS) process type, so set each to an asterisk (*).

Click **Yes** to create the workload definition.

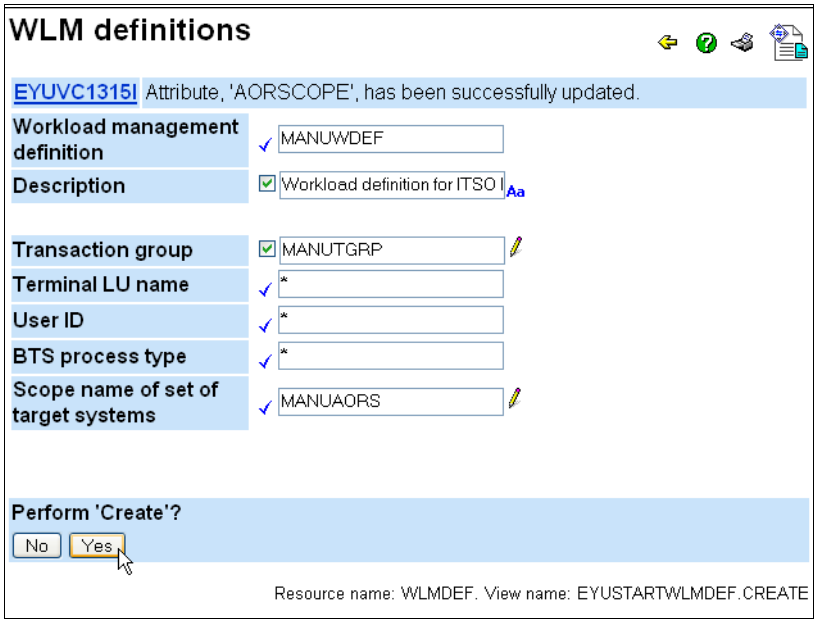


Figure 4-44 Create workload definition

Tip: The scope name of the target systems can identify either a single CICS system or a system group. Using a system group lets you add or remove target regions at a later time without having to reinstall the workload definition into the active workload.

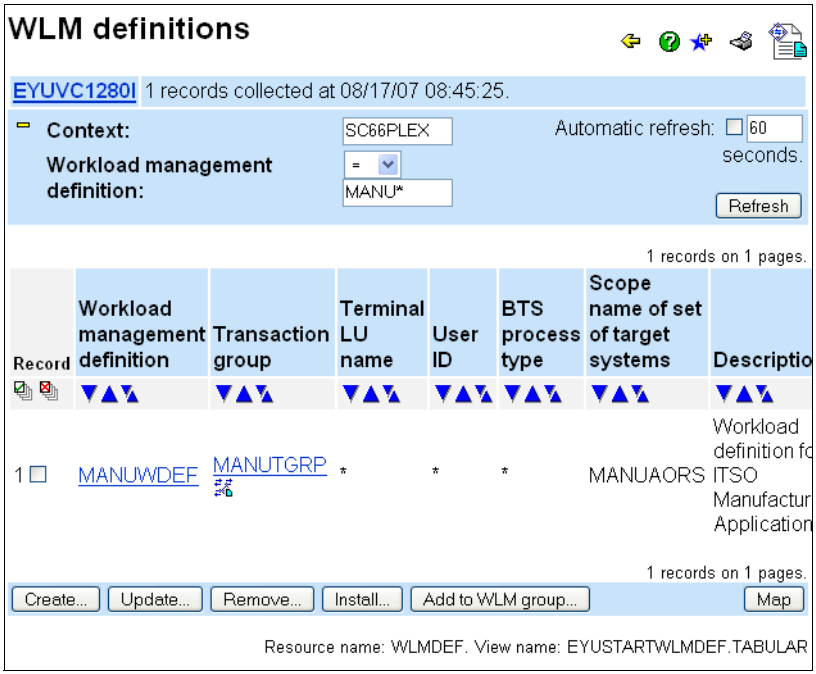


Figure 4-45 Workload management definition view

Workload management group

A workload management group (WLMGROUP) is used to associate one or more WLMDEFs into a logical grouping.

Click **Groups** in the Workload manager administration views menu (Figure 4-39 on page 142). Click **Create** to define a new workload management group.

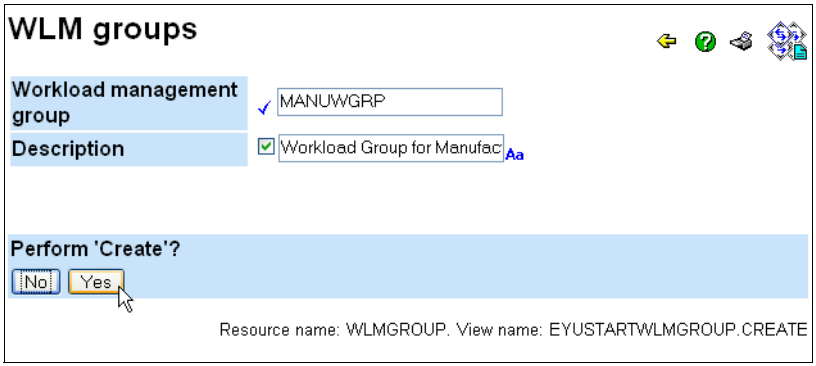


Figure 4-46 Creating a new workload management group

Enter the workload management group name (MANUWGRP) and description. Click **Yes** to create the new workload management group.

To add a workload group to a workload specification go to the WLM group view. Select the workload management group to be added by clicking the check box. Click **Add to WLM specification** (Figure 4-47).

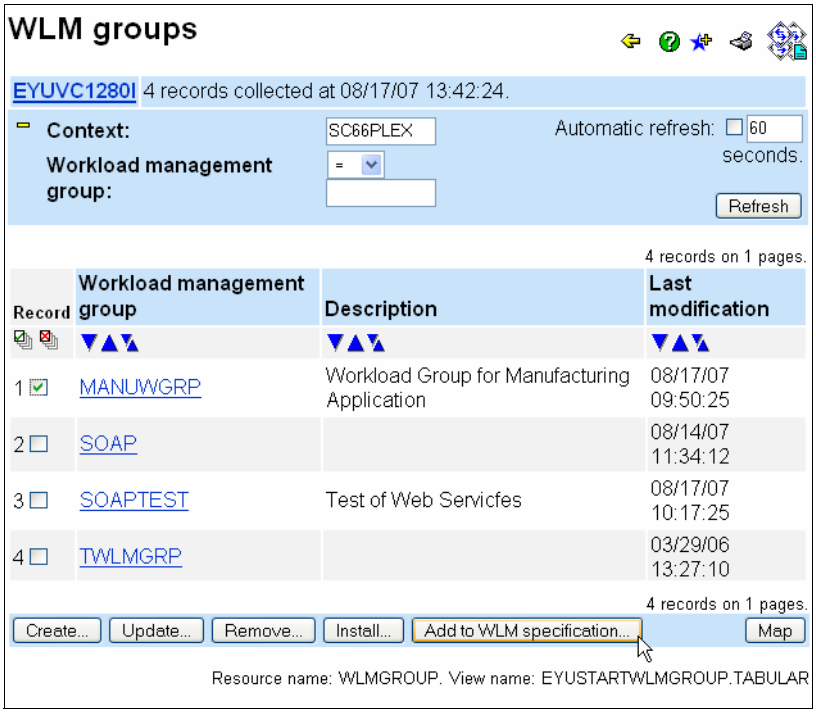


Figure 4-47 Workload management group view

Type (or select in a pick list) WLM specification WLS3270. Click **Yes** to add the workload management group to the specification.

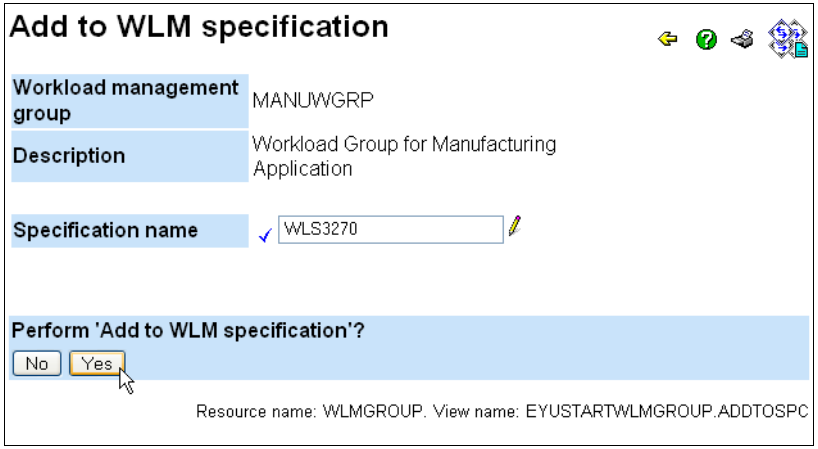


Figure 4-48 Add Workload management group to specification

To add a workload management definition to the workload management group, click **Definitions** in the Workload manager administration views menu (Figure 4-39 on page 142). Select the workload definition to be connected (MANUWDEF) by clicking its check box, and click **Add to WLM group**.

Type (or select in a pick list) the workload group name (MANUWGRP). Click **Yes** to add the workload definition to the workload group (Figure 4-49).

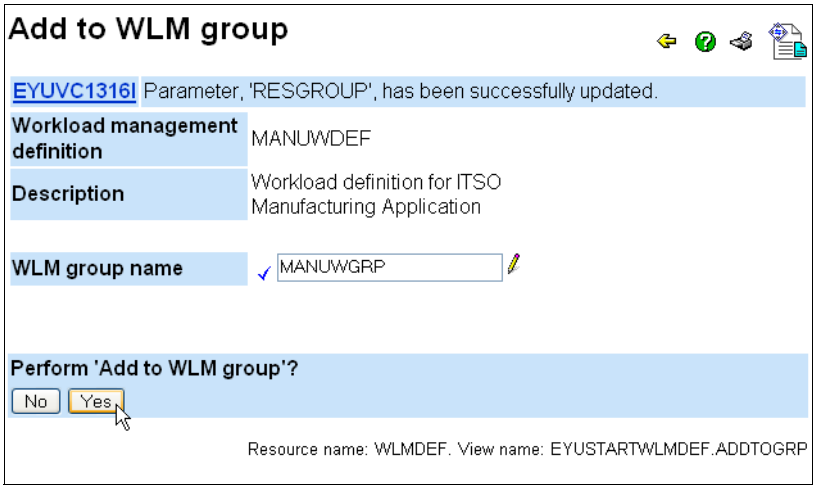


Figure 4-49 Adding a workload management definition to a workload group

Workload management specification

The workload management specification (WLMSPEC) specifies the default characteristics of the workload. It identifies the target scope that is used to route dynamic transactions that are not associated with an active transaction group. The WLMSPEC is also used to associate the workload with one or more routing regions.

Note:

1. A CICS target region can be a member of multiple WLMSPECs (except as noted in point 3 below).
2. A CICS routing region (TOR) can only be associated with one WLMSPEC.
3. When using SIT option DSRTPGM=EYU9XLOP, the AOR must also be added as a routing region, so in this circumstance it can only be a member of one WLMSPEC.

To run the sample application, an existing workload management specification (WLS3270) was used. This application does not require the extended capabilities provided by the distributed routing program (for example, routing of non-terminal-related started transactions and routing of BTS processes), so you do not need to associate the workload specification with our routing regions.

Click **Specifications** in the Workload manager administration views menu (Figure 4-39 on page 142).

To add CICS regions to the WLMSPEC select workload specification WLS3270 by clicking the check box. Click **Associate CICS group** (Figure 4-50).

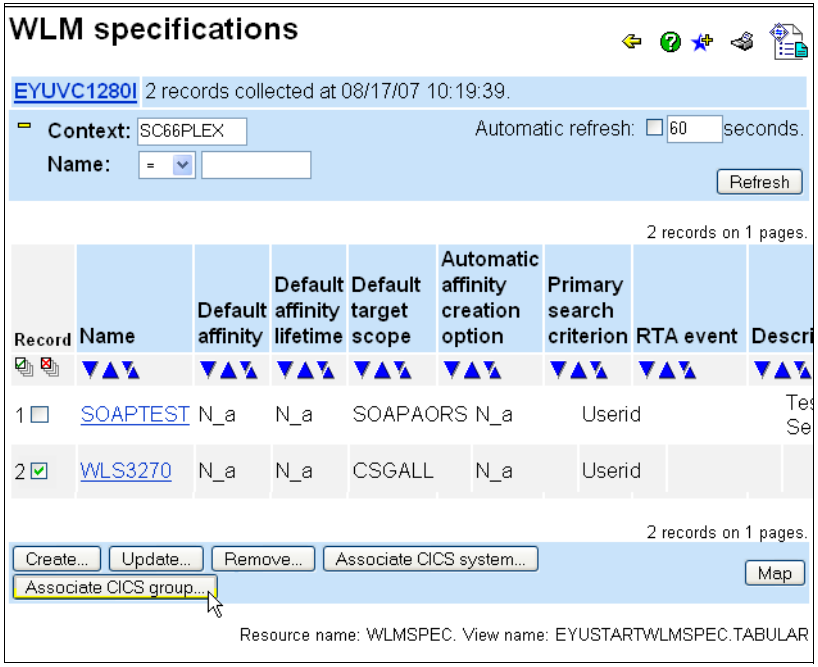


Figure 4-50 WLM specification view

1. Type (or select from a pick list) the name of the CICS system group (MANUTORS).
2. Select **NULL** to cause the association to be inherited by all CICS systems in the system group that are not already associated with a workload specification.
3. Click **Yes** to add the CICS systems in group MANUTORS to the workload management specification.

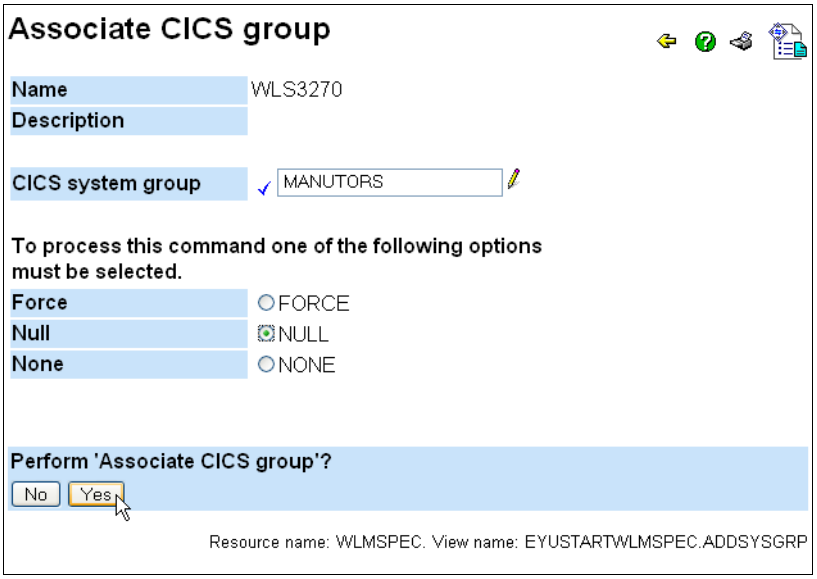


Figure 4-51 Associating a CICS system group to a workload specification

Note: FORCE causes all CICS systems in the system group to be associated with the workload specification even if they were associated with a different workload specification.

NULL causes CICS systems in the system group that are not currently associated with a workload specification to inherit the workload specification.

NONE causes the system group to be associated with the workload specification, but the association will not be inherited by any CICS systems, even if they are not currently associated with a workload specification.

To see the full list of CICS regions associated with this workload specification click the hyperlink for **WLS3270** in the WLM specifications view (Figure 4-50 on page 152). Then click the **CICS systems associated with workload specifications** view from the workload management specifications view.

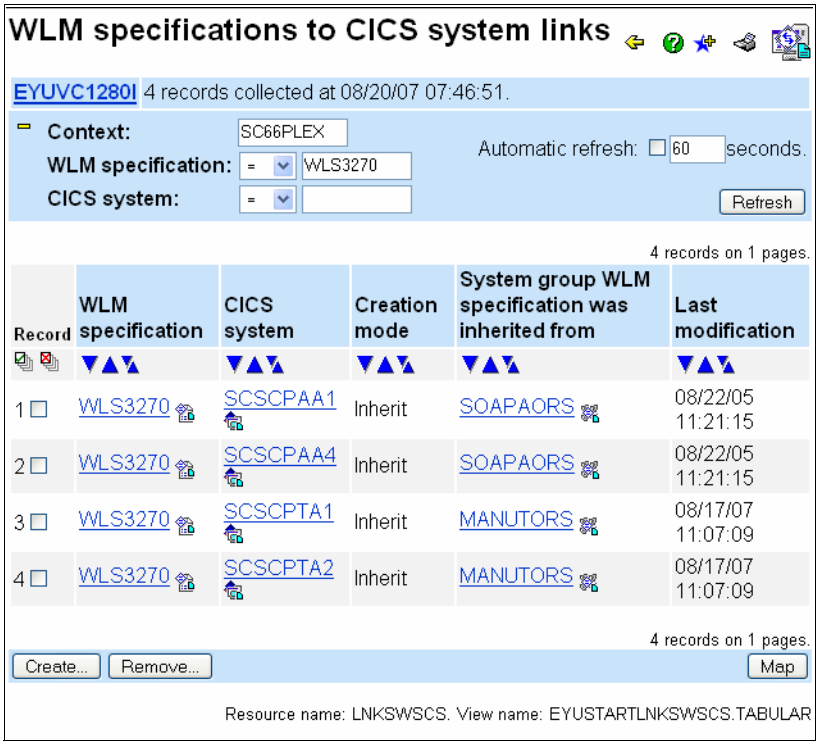


Figure 4-52 WLM specifications to CICS system links view

Using MAP to verify resource linkage

To confirm that the workload management resource associations are defined correctly, you can use the map facility. Click **Specifications** in the Workload manager administration views menu (Figure 4-39 on page 142).

Select workload specification WLS3270 by clicking the check box, and click **Map** (Figure 4-53).

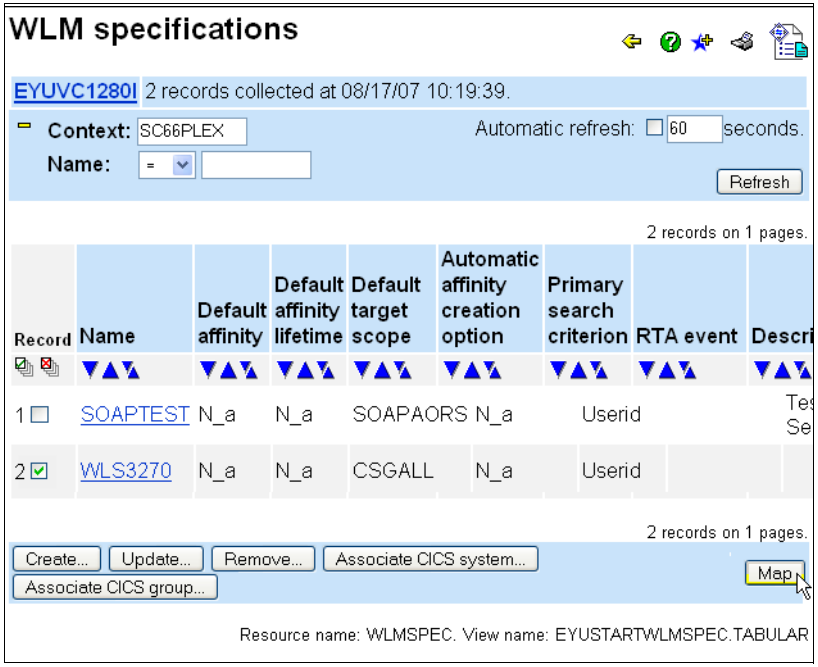


Figure 4-53 WLM specifications view (reprise)

Notice that several applications are associated with this WLM specification. These are all invoked from the same routing regions, but the target scope (the set of CICS systems in which each application's transactions execute) is identified in the WLM definitions, and might be different for each application.

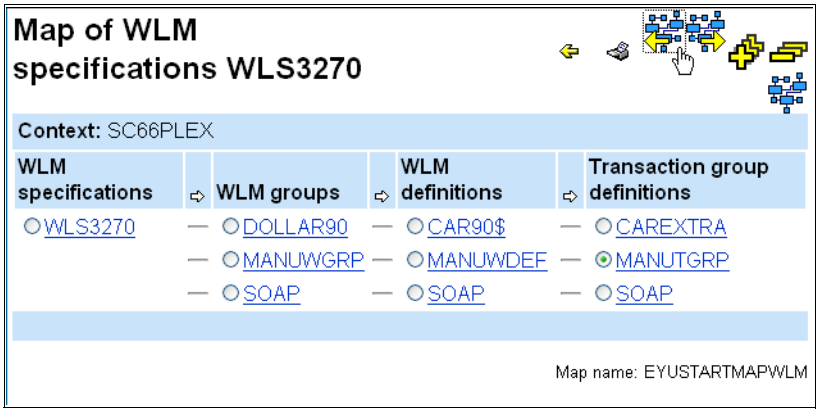


Figure 4-54 Map of WLM specification WLS3270

You can use the Map left and Map right icons to change the point of view in a map window. Select transaction group MANUTGRP by clicking the radio button. Click the Map left (Figure 4-55).

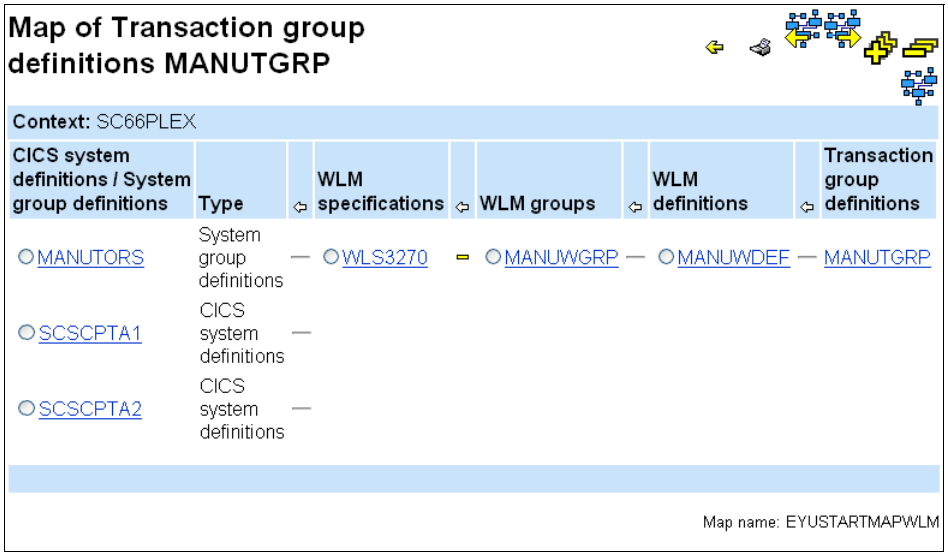


Figure 4-55 Map of Transaction group definitions MANUTGRP

This displays the routing region scope in which transaction group MANUTGRP is active.

4.2 Managing CICS resources using the WUI

In this section you manage CICS resources using several scenarios that would be useful for the operator, help desk, and even for the CICS system programmer. The following scenarios are described:

- Disabling a transaction in a number of CICS systems using the WUI
- Using the **newcopy** program command with the WUI
- Closing files across the CICSplex using the WUI
- Disabling a URIMAP to prevent a Web service from executing in a CICS system

4.2.1 Disabling a transaction in a number of CICS regions using WUI

You need to prevent execution of an application briefly to let file maintenance be performed. You can do this by disabling the application's transactions. In this section you disable transactions in more than one CICS system using the WUI.

1. Start from the main WUI menu, shown in Figure 4-1 on page 102.
2. Click **Local or dynamic transactions**. You will then receive the CICS operation view, shown in Figure 4-56 on page 158. This is just a warning to let you know that you might receive large amounts of data. You can now enter a transaction ID, which will limit the amount of data displayed.

3. Type `HX*` in the value field for Transaction ID. Click **OK** (Figure 4-56).

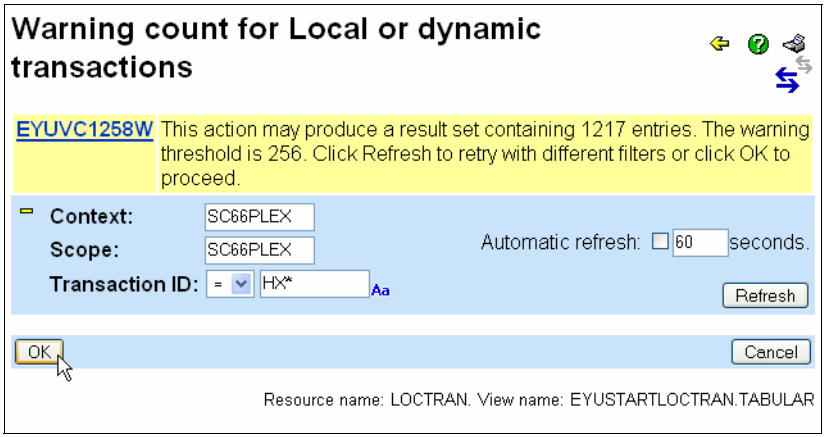


Figure 4-56 Warning count for Local or dynamic transactions

You see all CICS systems in which transactions with IDs beginning with the letters HX are installed. See Figure 4-57 on page 159 for details of the CICS systems in which these transactions are installed.

We see from Figure 4-57 that transactions with IDs beginning with HX are enabled in two CICS regions, SCSCPAA1 and SCSCPAA4. To disable these transactions in both systems, click the Select all icon at the top of the Record column. The check boxes in front of each CICS system name will be selected, as shown in Figure 4-57.

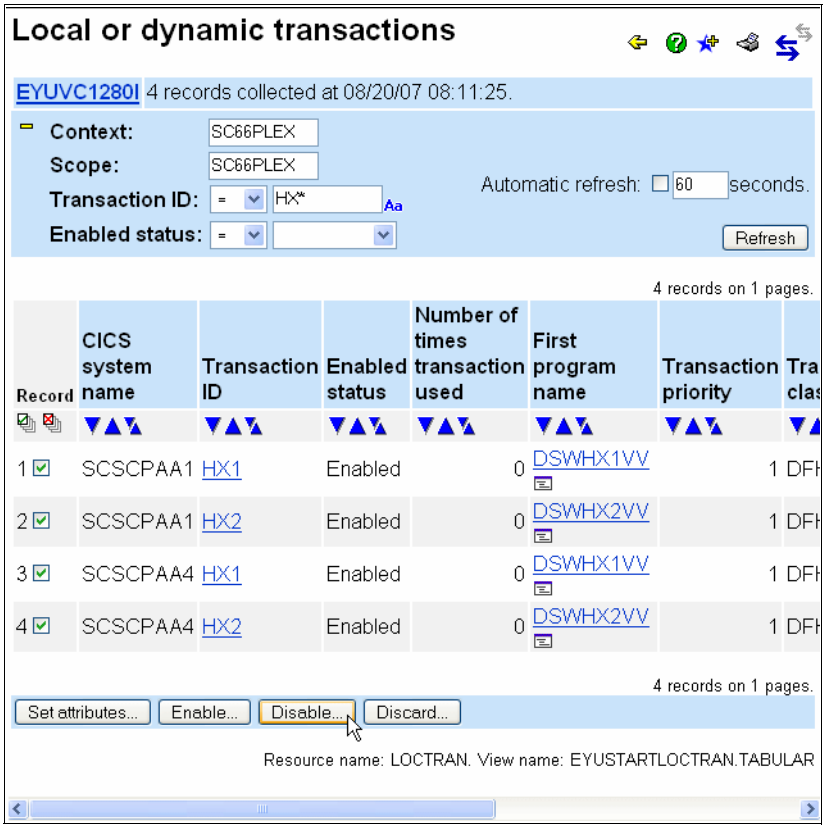


Figure 4-57 Local or dynamic transactions view

Then click **Disable** and you will receive the Disable panel shown in Figure 4-58.

To disable the transaction in both CICS systems, click **Yes to 4 remaining** (Figure 4-58). The Local and dynamic transactions view is redisplayed, showing that the transactions have been disabled.

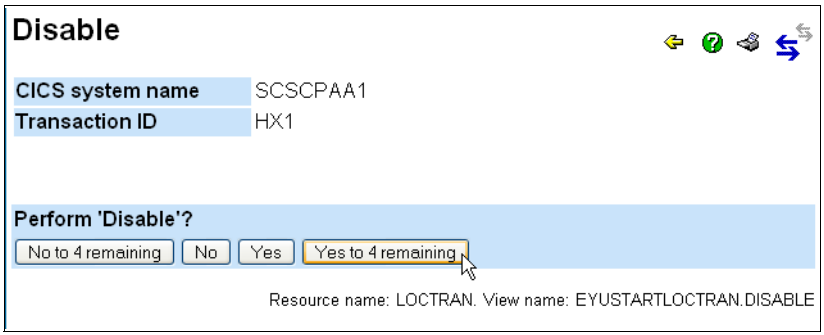


Figure 4-58 Disable Local or dynamic transactions

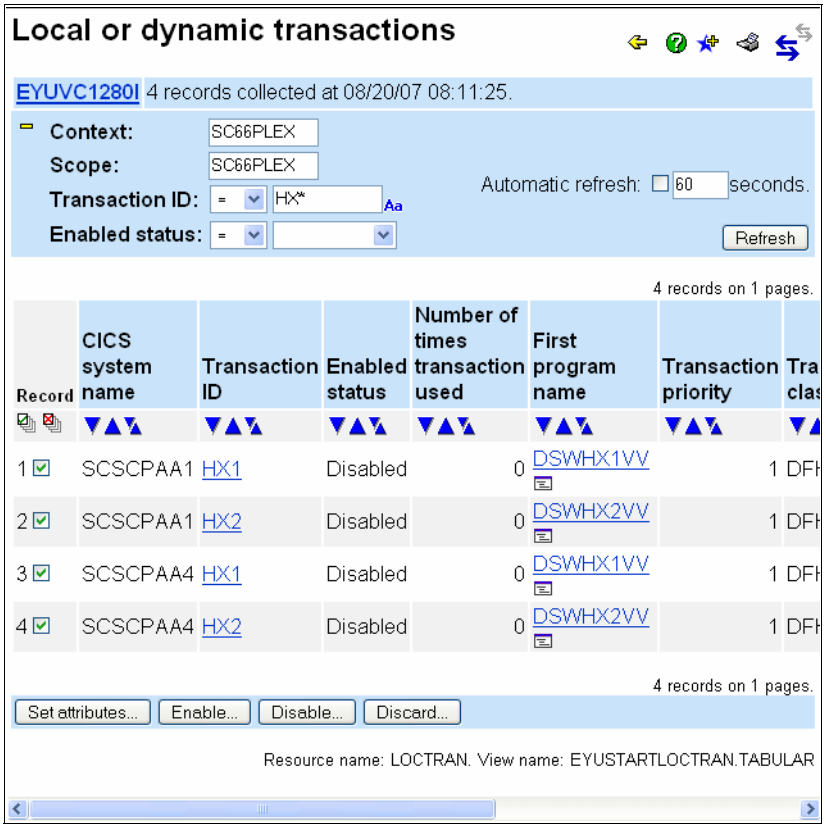


Figure 4-59 Local or dynamic transactions view (reprise)

4.2.2 New copy program command with the WUI

The **newcopy** program command loads the program into memory when the use count is zero. If the use count is not zero the program will not be loaded into memory. Using the **phasein** command causes the new program to be loaded into memory when the use count becomes zero.

Your developers have made some changes to the MANU application created in 4.1.2, “Defining workload resources using Business Application Services” on page 111. The updated programs have been replaced in the load library and the new copies must now be loaded.

The WUI main menu (Figure 4-1 on page 102) does not contain a link to the Program view. However, we can expand the **Programs** group in the navigation frame. See Figure 4-60

Figure 4-60 CICSPlex system manager WUI main window (reprise)

The submenu underneath Programs drops down. Select **Programs** in the drop-down submenu. You are then presented with the window shown in Figure 4-61.

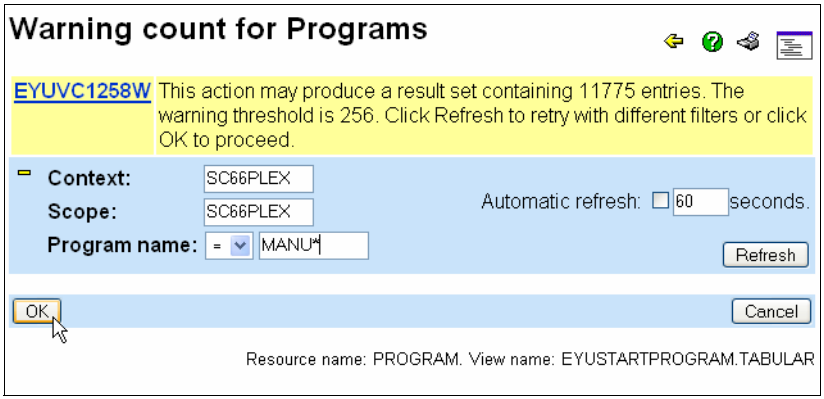


Figure 4-61 Warning count for Programs

In this window (Figure 4-61 on page 163) you can enter the name of the program that you are interested in. Type `MANU*` in the Program name text box, then click **OK**. See Figure 4-62 for details. Your programs are installed in two CICS systems: SCSCPAA1 and SCSCPAA4. Note that the application has been executed several times, but none of the programs are currently in use. You can, therefore, use the **`newcopy`** command to load the new versions of the programs, and do not have to use **`phasein`**.

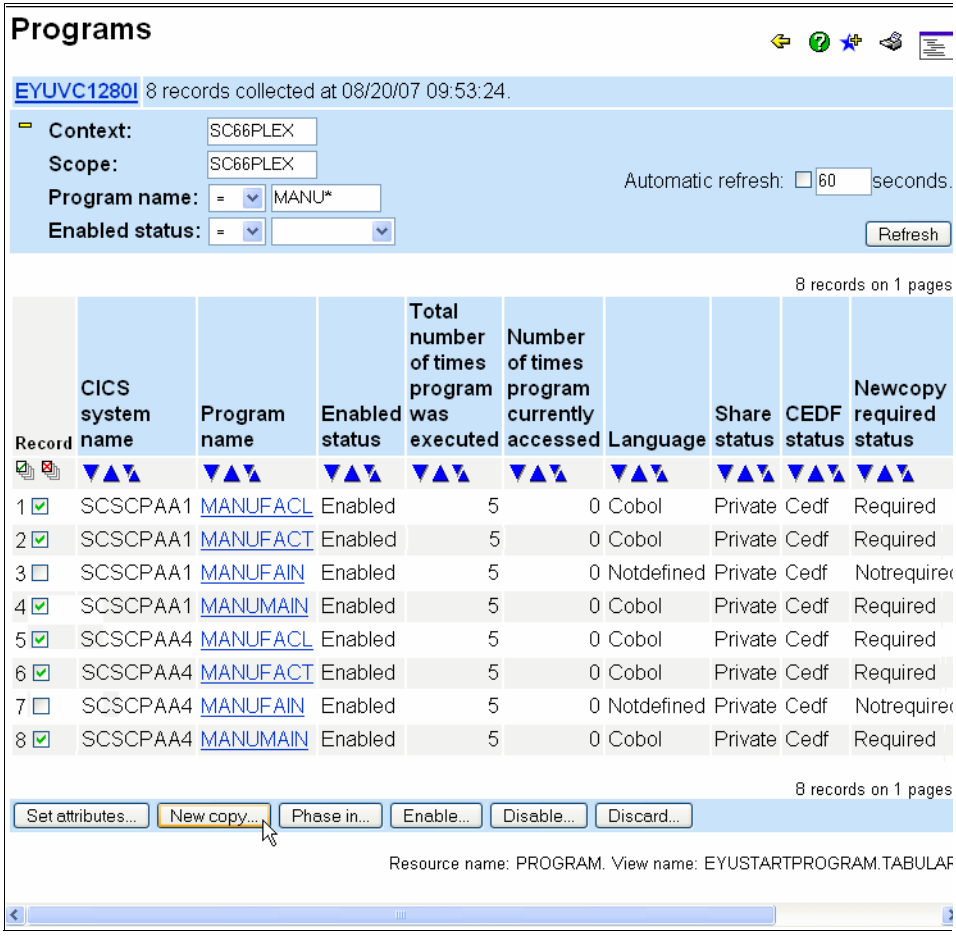


Figure 4-62 Programs view

Click the check boxes next to the CICS systems where a new copy of the program must be loaded. Then click **Newcopy**. You will see the confirmation panel shown in Figure 4-63.

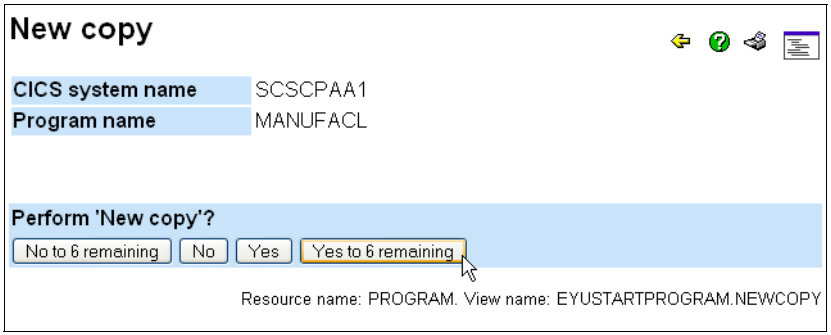


Figure 4-63 New copy Programs

Click **Yes for 6 remaining**. The Programs tabular view is redisplayed (see Figure 4-64), reflecting the result of the new copy operation.

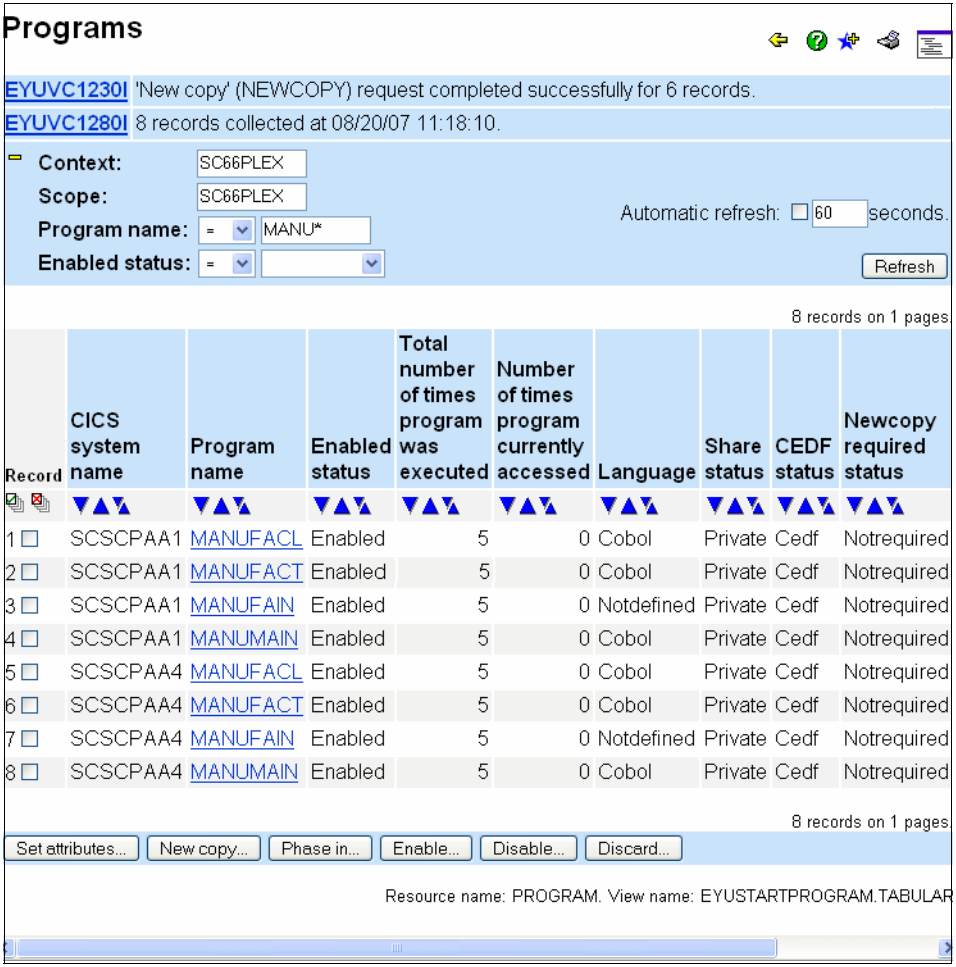


Figure 4-64 Programs view (reprise)

4.2.3 Closing files across the CICSplex using the WUI

In this section we explain how to close files across the CICSplex using the WUI.

From the main WUI menu (Figure 4-60 on page 162) click **CICS operations views** to display the CICS operations views menu (Figure 4-65).

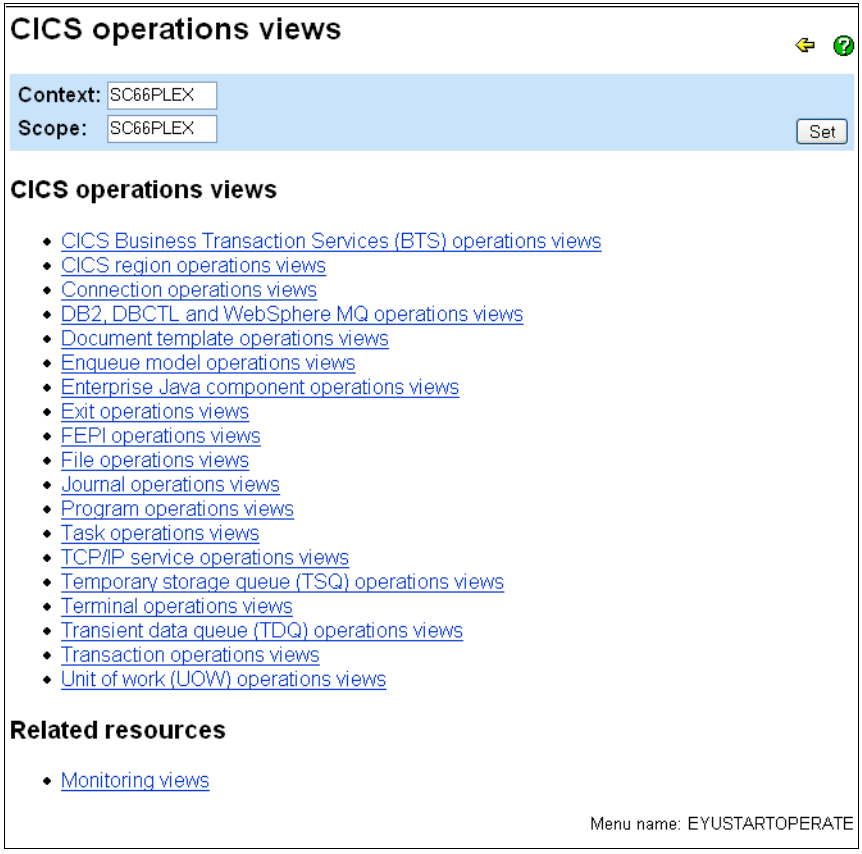


Figure 4-65 CICS operations views

Next click **File operations views** to display the File operations views menu. See Figure 4-66.

Figure 4-66 File operations views

Display the **Local Files** view (Figure 4-67). Examine list of files in different CICS systems.

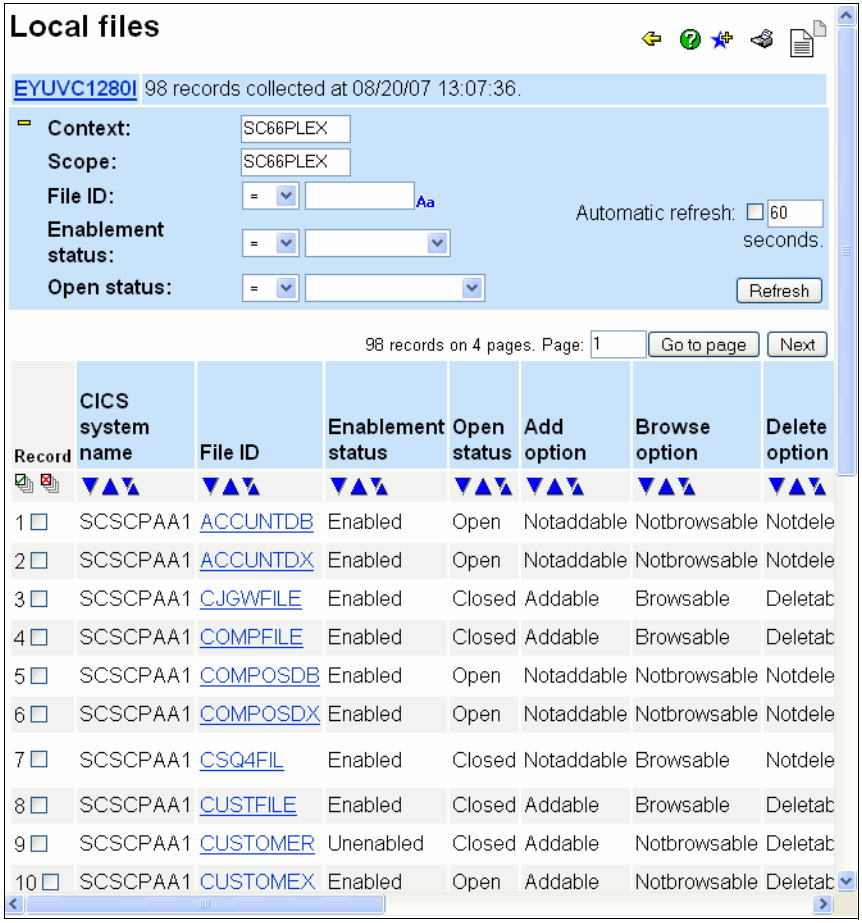


Figure 4-67 Local files view

Close files EXMPCAT and EXMPCONF in all CICS systems across the CICSplex. However, the Local files view displays 98 records on four pages. Because the default order for WUI operations views is by CICS system, you would have to scroll through the entire view to locate the resources you need. Instead, you can summarize the display to see one line per file. The Record count column contains the count of the number of CICS systems in which the file is installed. Click the Summarize icon ( ) for file ID.

Select files EXMPCAT and EXMCONF by clicking the check boxes. Now click **Close** (Figure 4-68).

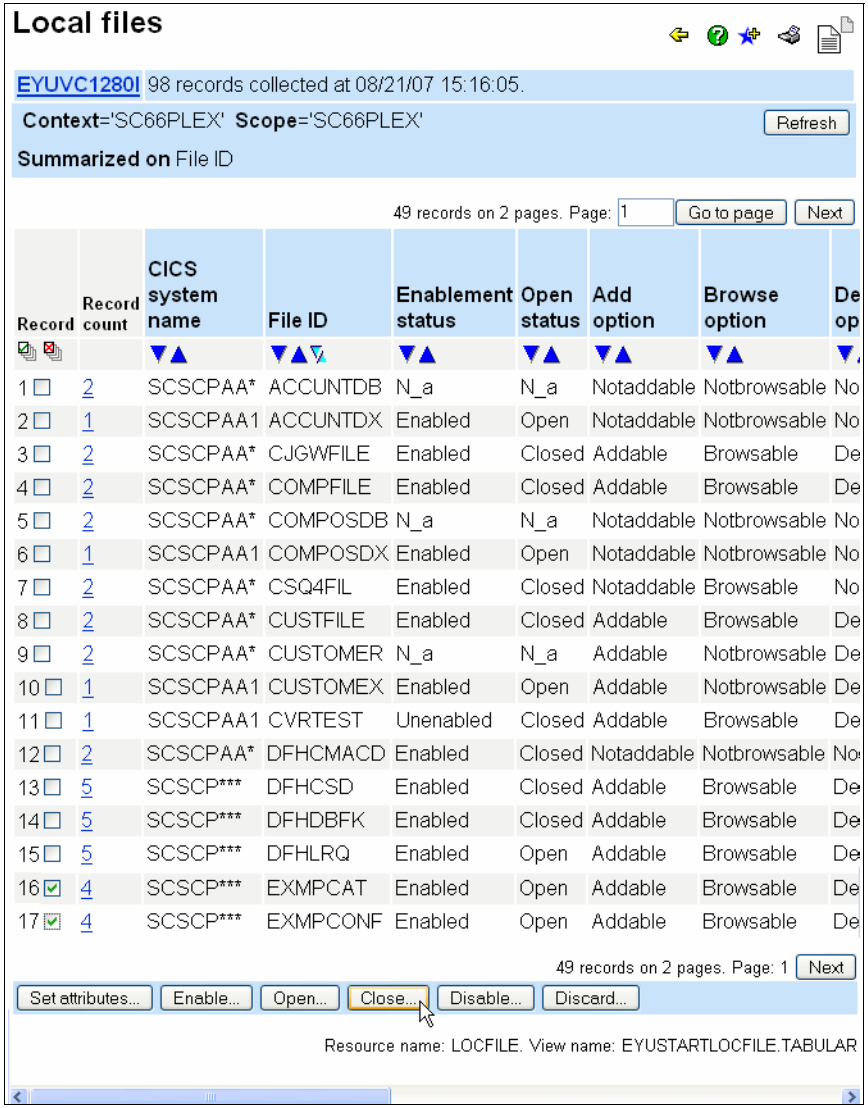


Figure 4-68 Local files summarized by file ID

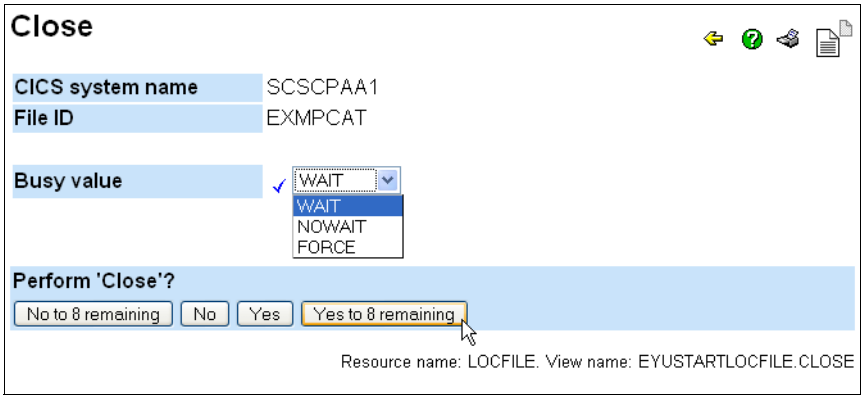
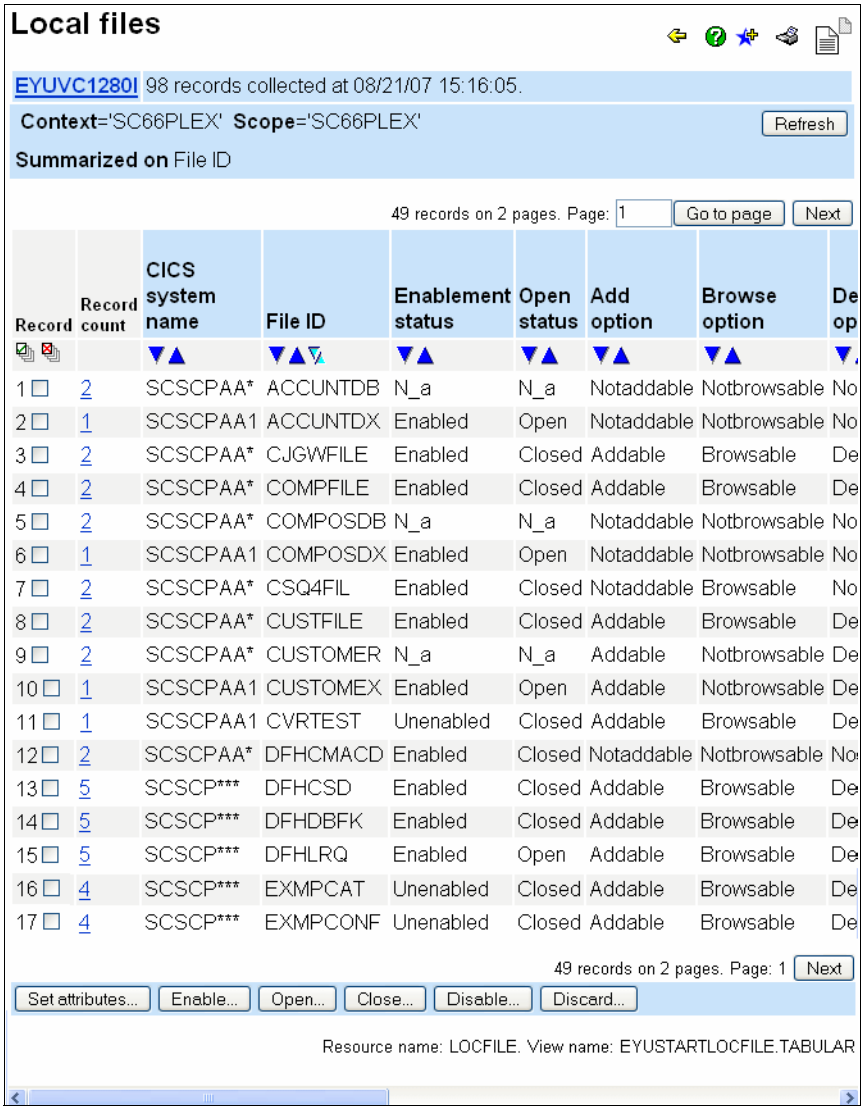


Figure 4-69 Close local file

The Close Local file panel allows you to specify whether you want CPSM to wait until the close operation has completed for all files. If you select WAIT, and one or more files are currently in use, the WUI does not refresh the Local files view until all files have been closed. This might result in a long delay.

If there is a possibility that files could still be in use, you might choose to select NOWAIT. The WUI refreshes the Local files view immediately. If close has not completed for all files, a value of N_a (not applicable) displayed for Open status

to show that the open status is not the same for all files. You can then request that the display be updated by clicking **Refresh**. When close has completed for all files, Open status changes to Closed. See Figure 4-70.



Local files

EYUVC1280I 98 records collected at 08/21/07 15:16:05.

Context='SC66PLEX' **Scope**='SC66PLEX' Refresh

Summarized on File ID

49 records on 2 pages. Page: 1 Go to page Next

Record	Record count	CICS system name	File ID	Enablement status	Open status	Add option	Browse option	De op
1	2	SCSCPAA*	ACCUNTDB	N_a	N_a	Notaddable	Notbrowsable	No
2	1	SCSCPAA1	ACCUNTDX	Enabled	Open	Notaddable	Notbrowsable	No
3	2	SCSCPAA*	CJGWFILE	Enabled	Closed	Addable	Browsable	De
4	2	SCSCPAA*	COMPFILE	Enabled	Closed	Addable	Browsable	De
5	2	SCSCPAA*	COMPOSDB	N_a	N_a	Notaddable	Notbrowsable	No
6	1	SCSCPAA1	COMPOSDX	Enabled	Open	Notaddable	Notbrowsable	No
7	2	SCSCPAA*	CSQ4FIL	Enabled	Closed	Notaddable	Browsable	No
8	2	SCSCPAA*	CUSTFILE	Enabled	Closed	Addable	Browsable	De
9	2	SCSCPAA*	CUSTOMER	N_a	N_a	Addable	Notbrowsable	De
10	1	SCSCPAA1	CUSTOMEX	Enabled	Open	Addable	Notbrowsable	De
11	1	SCSCPAA1	CVRTEST	Unenabled	Closed	Addable	Browsable	De
12	2	SCSCPAA*	DFHCMACD	Enabled	Closed	Notaddable	Notbrowsable	No
13	5	SCSCP***	DFHCSD	Enabled	Closed	Addable	Browsable	De
14	5	SCSCP***	DFHDBFK	Enabled	Closed	Addable	Browsable	De
15	5	SCSCP***	DFHLRQ	Enabled	Open	Addable	Browsable	De
16	4	SCSCP***	EXMPCAT	Unenabled	Closed	Addable	Browsable	De
17	4	SCSCP***	EXMPCONF	Unenabled	Closed	Addable	Browsable	De

49 records on 2 pages. Page: 1 Next

Set attributes... Enable... Open... Close... Disable... Discard...

Resource name: LOCFILE. View name: EYUSTARTLOCFILE.TABULAR

Figure 4-70 Local files summarized by file ID (reprise)

4.2.4 Disabling a URIMAP to prevent a Web service from executing in a CICS system

From the CICS operations menu (Figure 4-65 on page 167) click **TCP/IP service operations views**. The TCP/IP service operations menu (Figure 4-71) is shown.

Figure 4-71 TCP/IP service operations views menu

You need to prevent Web services providing inquire services from executing in one of your CICS systems until a configuration error can be corrected.

1. Click **Web service** to display a list of Web service definitions installed in CICS systems in the current scope. Type `inq*` in the Web service name filter to display only Web services providing inquire services.
2. Click the Summarize icon for CICS system name.
3. Click the hyperlink in the Record count column for the CICS system where the error exists.

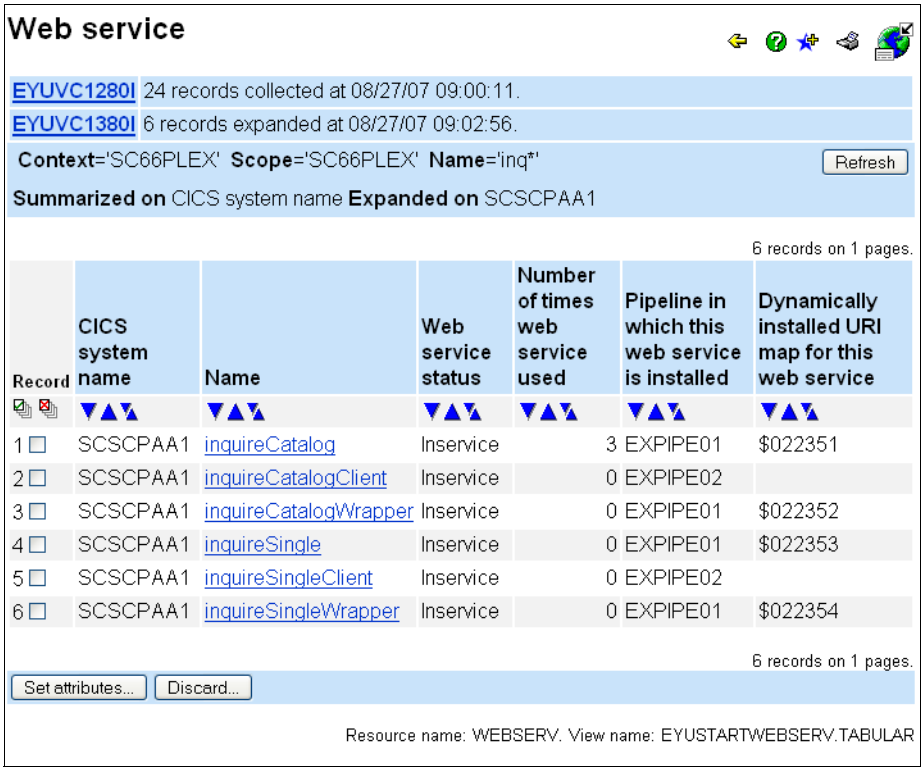


Figure 4-72 Web service view

4. Make a note of the dynamically installed URI maps for inquire services.
5. Click the Return to previous menu icon in the Assistance frame.
6. In the TCP/IP services operations views menu (Figure 4-71 on page 173) click **URI map**.
7. Click the Summarize icon for CICS system name.
8. Click the hyperlink in the Record count column for the CICS system where the error exists.

9. Select each of the URI maps noted in step 4 by clicking their check boxes. Click **Disable** to disable the marked URI maps (Figure 4-73).

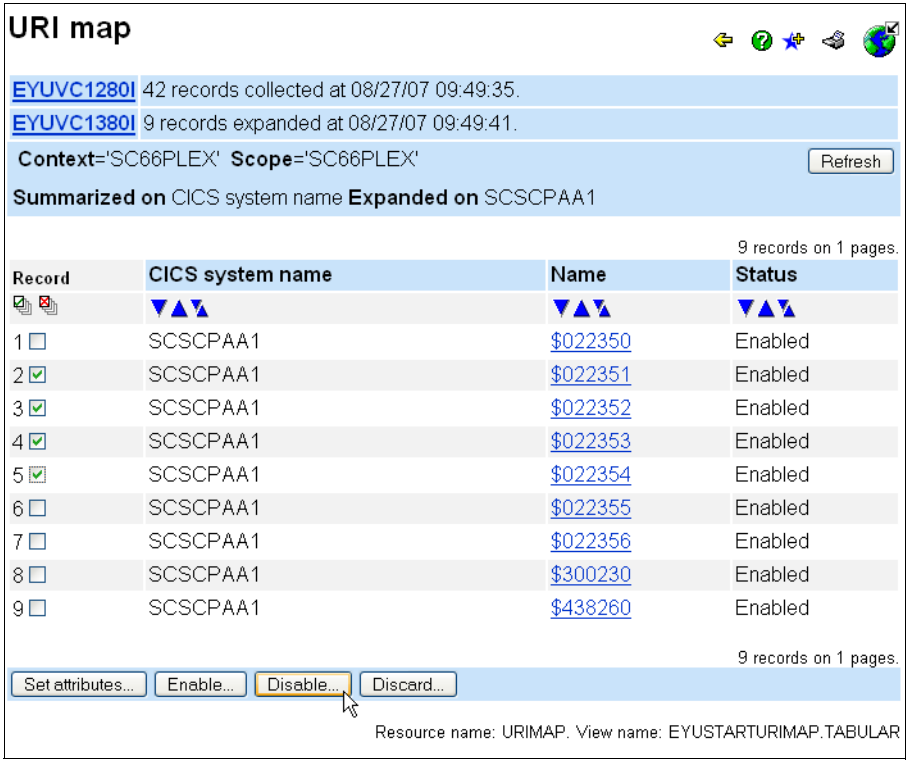


Figure 4-73 URI map view

10. Click **Yes to 4 remaining** to disable URI maps for Web services providing inquire services (Figure 4-74).

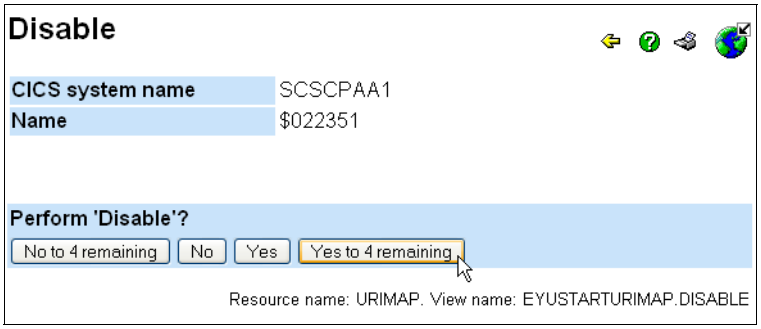


Figure 4-74 Disable URI map

11. When redisplayed, the URI map view confirms that the Disable action completed successfully, and that four URI maps are now disabled (Figure 4-75).

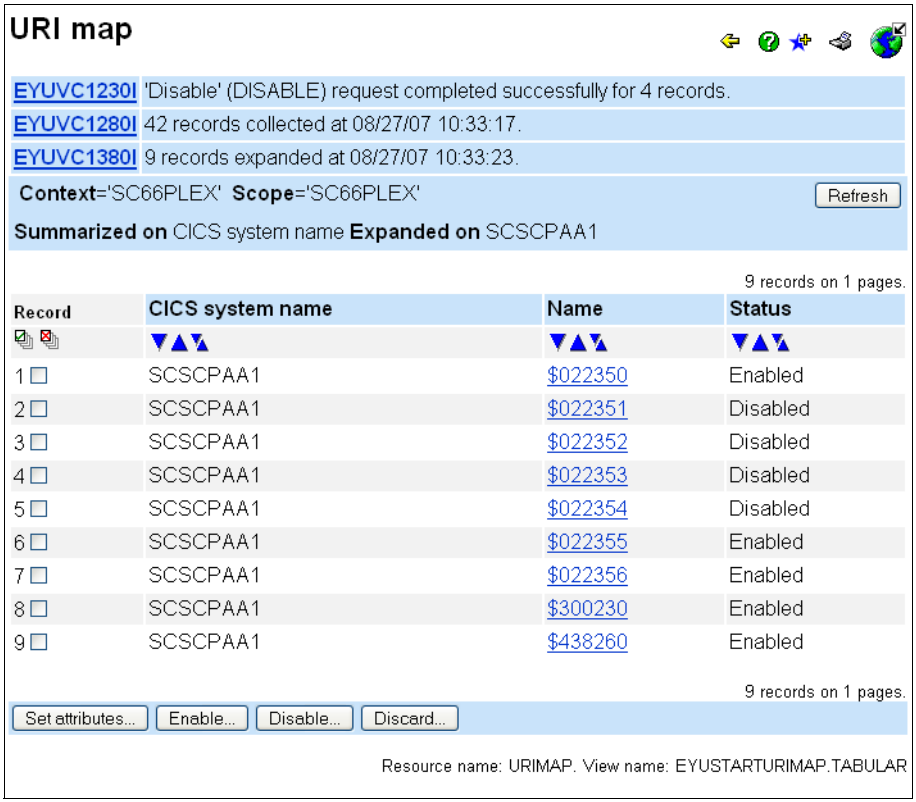


Figure 4-75 URI map view (reprise)

5

WUI view modification and customization

In this chapter we describe the facilities for tailoring the user's environment and for defining and using customized menus and views in the CICSPlex SM Web User Interface (WUI). We describe how to use group definitions to tailor session defaults for different classes of users. To customize the WUI's user presentation, we use favorites to save frequently used views and menus, and the view editor to create new views and menus tailored for a specific situation or user environment.

We discuss the following topics:

- Using user editor to modify default session parameters
- Using favorites to capture customized views and menus
- Using view editor to define new views and menus

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5.1 Using user editor to modify default session parameters

During initialization, the WUI server obtains default values for several parameters that define the characteristics available to users. These are:

- DEFAULTWARNCNT specifies the size of the maximum number of records expected for query without generating a warning screen.

  Note: Currently, warning counts are not issued for all resources. Warning counts are only issued for the following resources: CMDT, CONNECT, DB2CONN, DB2ENTRY, DB2TRN, DOCTEMP, DSKJRNL, DSNAME, ENQMODEL, EXITGLUE, EXITTRUE, EXTRATDQ, FEPICONN, FEPINODE, FEPIPOOL, FEPITRGT, INDTDQ, INTRATDQ, JOURNAL, JRNLNAME, LIBRARY, LOCFILE, LOCTRAN, MODENAME, PARTNER, PROCTYP, PROFILE, PROGRAM, REMFILE, REMTDQ, REMTRAN, RQMODEL, SMFJRNL, SYSDUMP, TAPEJRNL, TCPIPS, TERMNL, TRANDUMP, and TSMODEL. In large CICSplexes you should take care when retrieving other types of resources. You should adjust your scope or set filter confirmation on your hyperlinks to avoid retrieving too much data.

- DEFAULTMENU identifies the menu that appears in the work frame of the initial WUI window. This menu is redisplayed in the work frame when you click **Home**.

Note: The work frame is the area in which data is presented to the user for interaction. The work frame can display:

- A title for the information being displayed.
- A link to your customizable view and menu help for the display.
- A message area containing one or more messages and links to the explanation of the messages being displayed.
- A selection criteria and refresh area that allows you to set the context, scope, and filters, and refresh the menu or view currently being displayed.
- The results of your work requests, in one of the following formats:
  - Menu, which is a list of related topics from which you can select one or more links
  - Tabular view, showing formatted information about multiple records for a resource type
  - Detail view, showing information about a single resource instance
  - Confirmation panel, allowing the options to commit or cancel an action, or provide additional input
  - A signon panel, which is an interactive panel asking you for your signon information
  - A simple message display that contains a title and an information message, with no additional data

- DEFAULTNAVIGATE identifies the menu that appears in the navigation frame.

Note: The navigation frame appears on the left of the display and contains items that allow you to display a menu or view or to perform an action. The items that are displayed depend on your configuration and authority. For example, if you do not have authority to customize the display, you will not have a link to the view editor.

- DEFAULTCONTEXT, DEFAULTSCOPE, and DEFAULTCMASCTXT identify the initial context, scope, and CMAS context used by the WUI to determine to which regions a request are sent.
- GLOBALPREFILTER forces the filters for a view to be displayed before any records are retrieved. This allows you to restrict the number of records returned by applying filters before retrieving any data.

- DEFAULTMAPCOLL specifies the number of rows that can be displayed in a section of a Map screen before that section is displayed in a collapsed state.
- DEFAULTMAPWLM, DEFAULTMAPMON, DEFAULTMAPRTA, and DEFAULTMAPBAS specify which map objects should be used when a map is displayed.
- Because the default values for these parameters might not be suitable for all users, an administrator can define other defaults for specific groups of users using the user editor. These are stored in a user group object in the WUI repository.

Restriction: User group profiles are only available if security is active in the WUI server. When a user signs on to the WUI, the default group name is retrieved from the External Security Manager (ESM). The default group name is then used to retrieve a group object from the WUI repository.

5.1.1 Defining a group profile with the user editor

Note: The user editor link is only displayed if the user is allowed to use it.

In our first example we create a user group profile for a group of users with default group name CICSOPS. We want to display a warning if a view will return more than 250 resources and to specify the default menu and navigate menu that will appear when a user has signed on to the WUI.

1. Open the user editor by clicking the **User editor** link in the WUI window's Navigation frame. In the next window, click the **User groups** link. The next window allows you to select the function to be performed. Click the **Create** link to define a new group profile.

2. Enter the group name in the text box in the Create New User Group window. Remember that the group name must match the default security group name of the users for whom the profile will apply. Click **OK** (Figure 5-1).

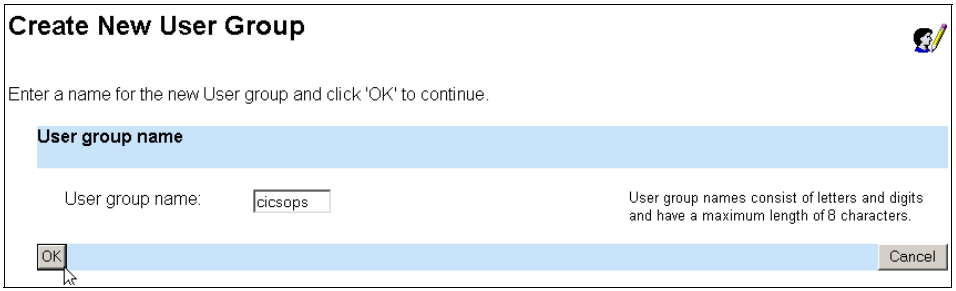


Figure 5-1 Create New User Group window

3. Enter the desired parameters in the Edit User Group Profile window. Click **Save** to save the user group object in the WUI repository (Figure 5-2).

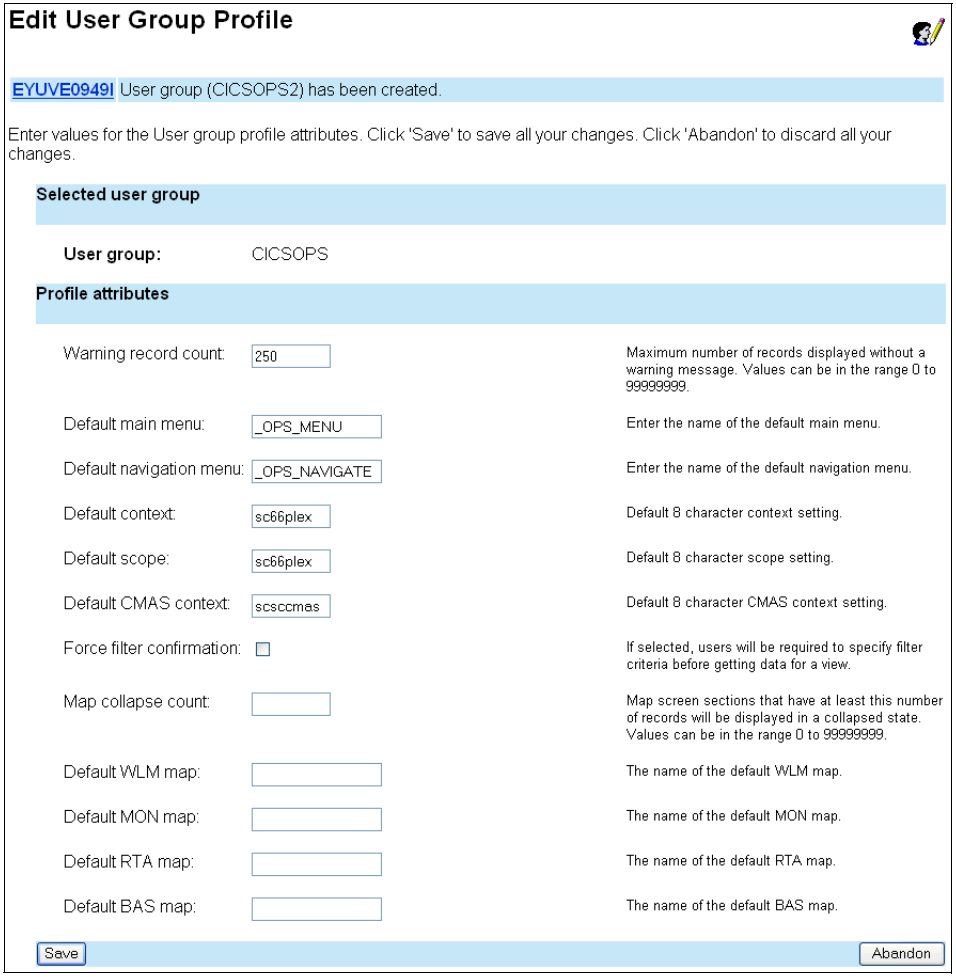


Figure 5-2 Edit User Group Profile window

5.2 Using favorites to capture customized views and menus

You can save customized menus or views as favorites, allowing them to be reused at a later time. Favorites save the context, scope, and CMAS context of the menu or view; the contents of view filters; and the sort order of a view. Favorites do not allow the contents of menus or views to be modified, however.

View favorites may be captured by clicking the Add to favorites icon in the WUI window. Menu and view favorites may also be created using the user editor, and may be edited or deleted using the favorites editor or the user editor. The user editor allows menus to be added to the favorites list. Both editors allow additional customization of favorites, like filtering on fields other than those supported in the distributed views.

Note: Note the following:

- Favorites editor link

  Open a new window containing the Web user interface customization tool, the favorites editor. This is available only to users who have created one or more favorites.

- View editor link

  Open a new window containing the Web user interface customization tool, the view editor. This is available only to users with the appropriate authority.

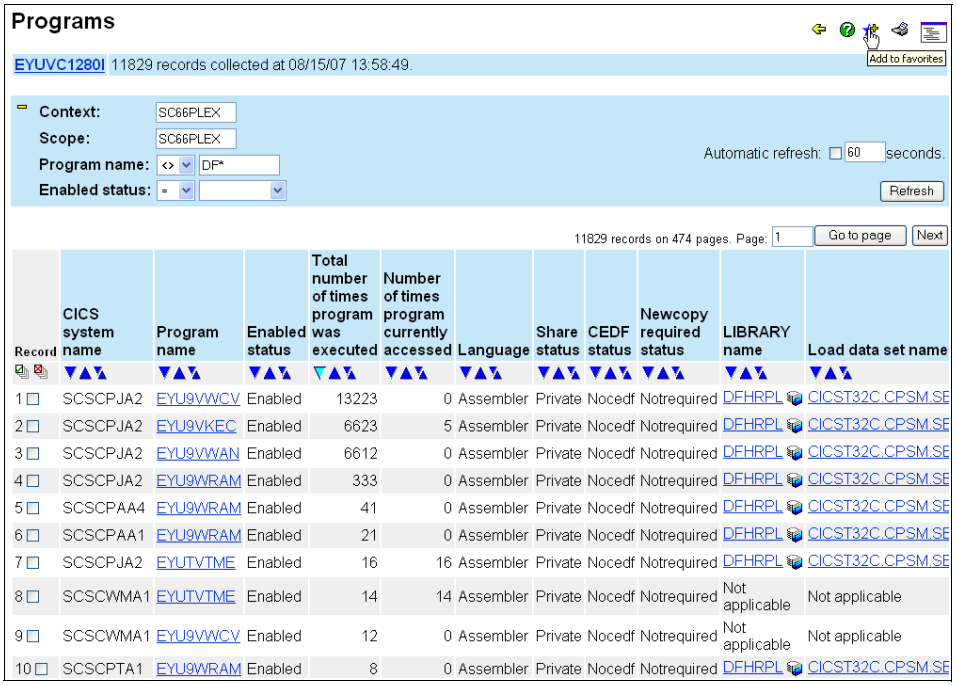
- User editor link

  Open a new window containing the Web user interface customization tool, the user editor. This is available only to users with the appropriate authority.

Note: Anyone can use the favorites editor to edit their own favorites. Users who have authority to use the user editor can edit or remove favorites for other users. Consider setting up a process to delete a user's favorites when a user ID is removed from the system.

5.2.1 Saving a customized view as a favorite

In our example, we want to display all application (that is, non-CICS) programs displayed in descending order by use count. Figure 5-3 shows the customized view. We defined a filter `Program name <> DF*` to remove CICS programs from the result set. We have also clicked the down arrow for the “Total number of times program was executed” column to sort the outputed results by descending use count.



Record	CICS system name	Program name	Enabled status	Total number of times program was executed	Number of times program currently accessed	Language	Share status	CEDF status	Newcopy required status	LIBRARY name	Load data set name
1	SCSCPJA2	EYU9VWCV	Enabled	13223	0	Assembler	Private	Nocedf	Notrequired	DFHRPL	CICST32C.CPSM.SE
2	SCSCPJA2	EYU9VKEC	Enabled	6623	5	Assembler	Private	Nocedf	Notrequired	DFHRPL	CICST32C.CPSM.SE
3	SCSCPJA2	EYU9VWAN	Enabled	6612	0	Assembler	Private	Nocedf	Notrequired	DFHRPL	CICST32C.CPSM.SE
4	SCSCPJA2	EYU9WRAM	Enabled	333	0	Assembler	Private	Nocedf	Notrequired	DFHRPL	CICST32C.CPSM.SE
5	SCSCPAA4	EYU9WRAM	Enabled	41	0	Assembler	Private	Nocedf	Notrequired	DFHRPL	CICST32C.CPSM.SE
6	SCSCPAA1	EYU9WRAM	Enabled	21	0	Assembler	Private	Nocedf	Notrequired	DFHRPL	CICST32C.CPSM.SE
7	SCSCPJA2	EYUTVTME	Enabled	16	16	Assembler	Private	Nocedf	Notrequired	DFHRPL	CICST32C.CPSM.SE
8	SCSCWMA1	EYUTVTME	Enabled	14	14	Assembler	Private	Nocedf	Notrequired	Not applicable	Not applicable
9	SCSCWMA1	EYU9VWCV	Enabled	12	0	Assembler	Private	Nocedf	Notrequired	Not applicable	Not applicable
10	SCSCPTA1	EYU9WRAM	Enabled	8	0	Assembler	Private	Nocedf	Notrequired	DFHRPL	CICST32C.CPSM.SE

Figure 5-3 Customized Program view

The steps are:

1. Click the Add to favorites icon in the top right corner of the window. Type the name by which the favorite will be saved in the Add to Favorites window. Click **OK** to save the favorite (Figure 5-4).

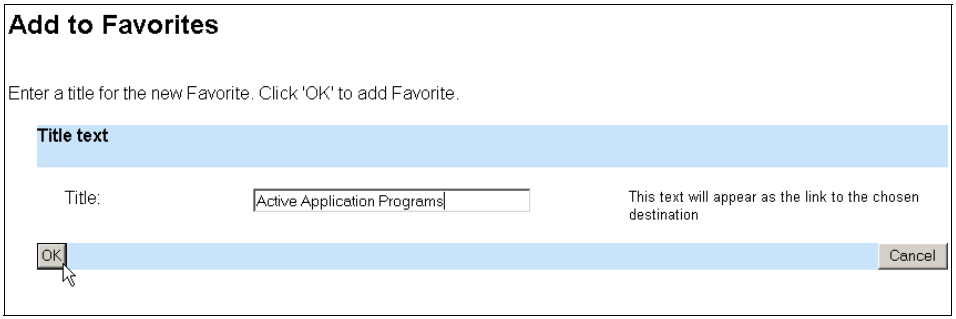


Figure 5-4 Add to Favorites window

2. To see the new favorite in the navigation frame, click the **Refresh** hyperlink in the navigation frame and expand the favorites toggle.

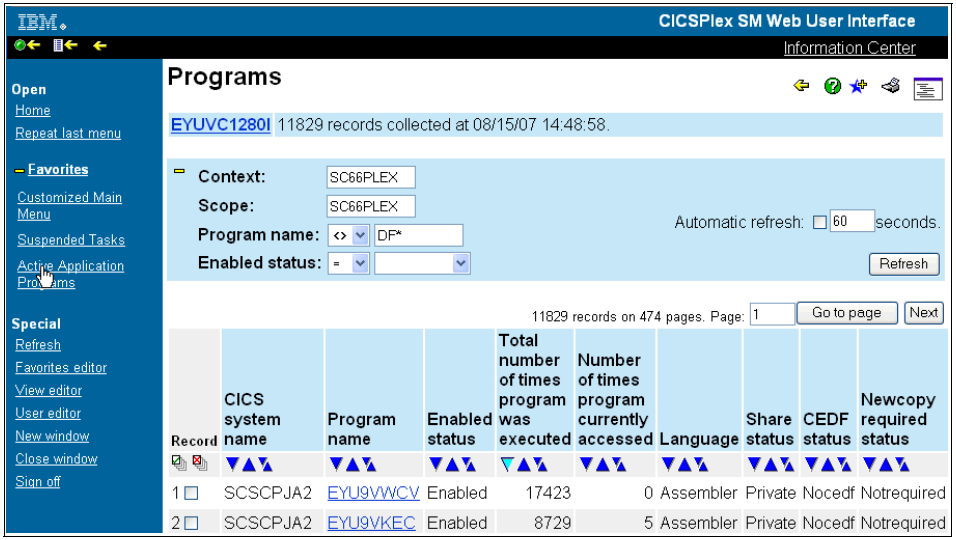


Figure 5-5 Active application programs in favorites list

5.2.2 Creating a favorite using the user editor

In this example, we create a favorite pointing to a user menu.

Note: If you have never created a favorite, then it will not be shown in the navigation frame, and neither will the favorites editor. Instead, under Special in the navigation frame will be an item called Refresh. Once the first favorite is added for a user, clicking Refresh will rebuild the navigation frame with the favorites expand icon along with the favorites editor.

1. Open the user editor by clicking the **User editor** link in the WUI window's navigation frame. In the next window, click the **Users** link. The next window allows you to select the function to be performed.
2. Click the **Edit** link to edit an existing user (Figure 5-6).

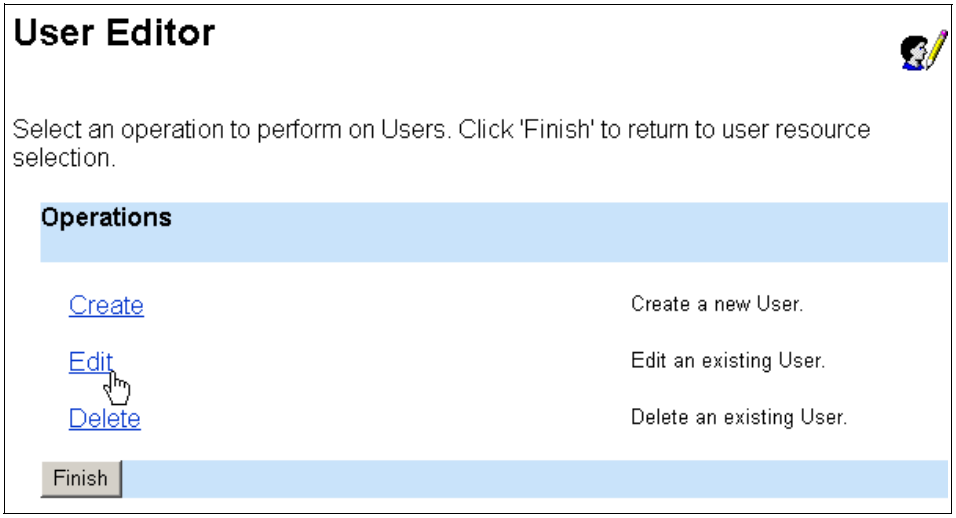


Figure 5-6 User Editor window

3. Select the user object to be edited and click **OK** (Figure 5-7).

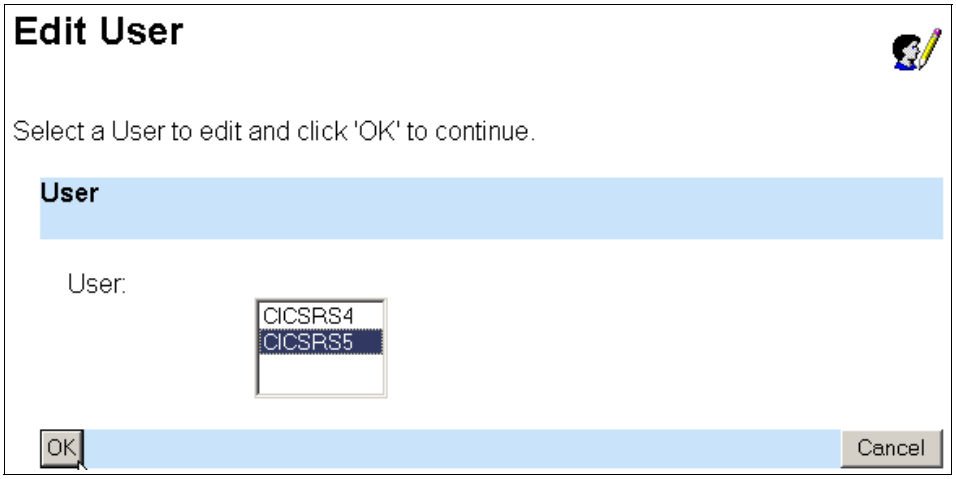


Figure 5-7 Edit User window

4. Click the **Create** link in the Favorites Editor window to create a new item in the Favorites list (Figure 5-8).

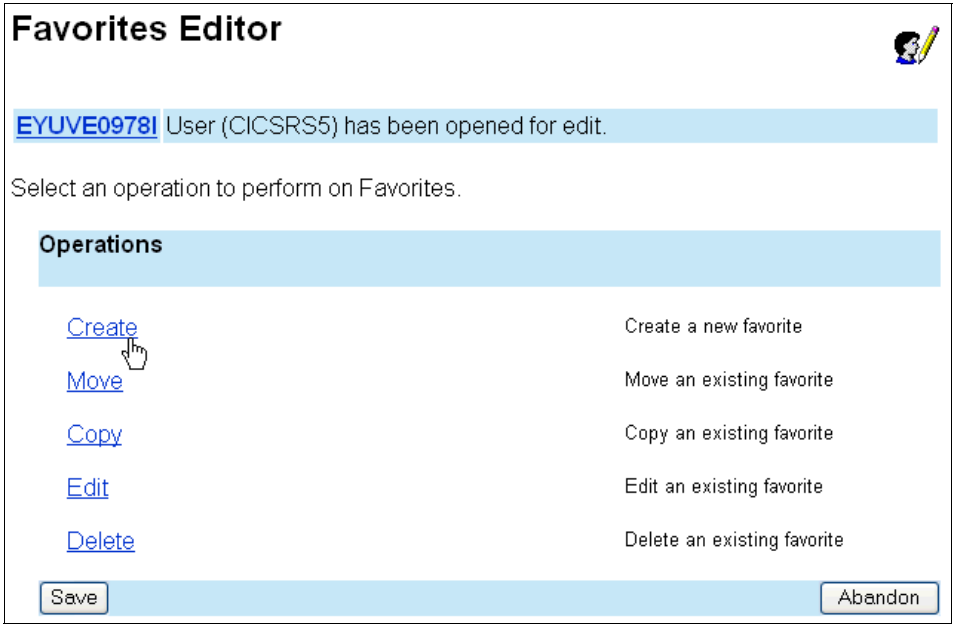


Figure 5-8 Favorites Editor window

5. In the Components of Favorite window, click the **Title, annotation and help text** link to give the favorite a title (Figure 5-9).

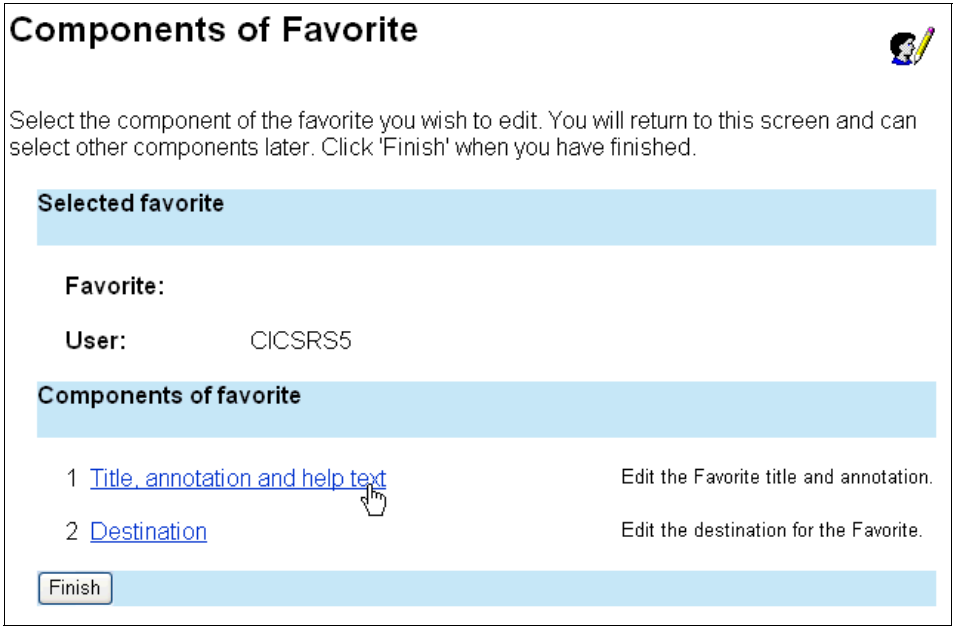


Figure 5-9 Components of Favorite window

6. In this example we call the new favorite `CICS Operator's Menu`. Click **OK** to save the title and return to the Components of Favorite window (Figure 5-10).

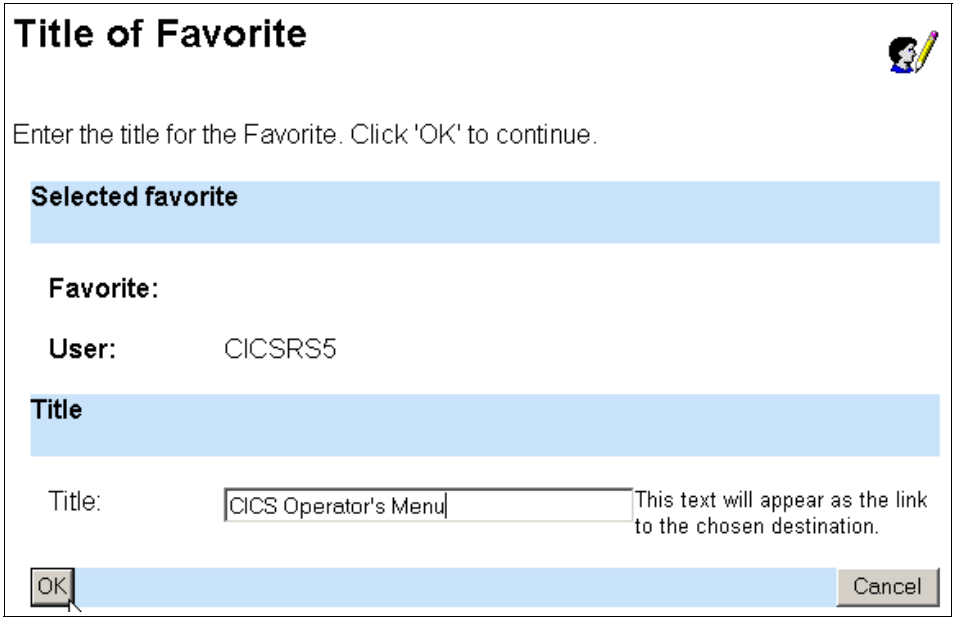


Figure 5-10 Title of Favorite window

7. In the Components of Favorite window (Figure 5-9 on page 188) select **Destination** to identify the target of the favorite. We can create a favorite to link to a menu, a view, or an external URL. In this case we add a menu to the favorites list.

8. Clicking **OK** (Figure 5-11) takes us to the Menu Link Components selection window.

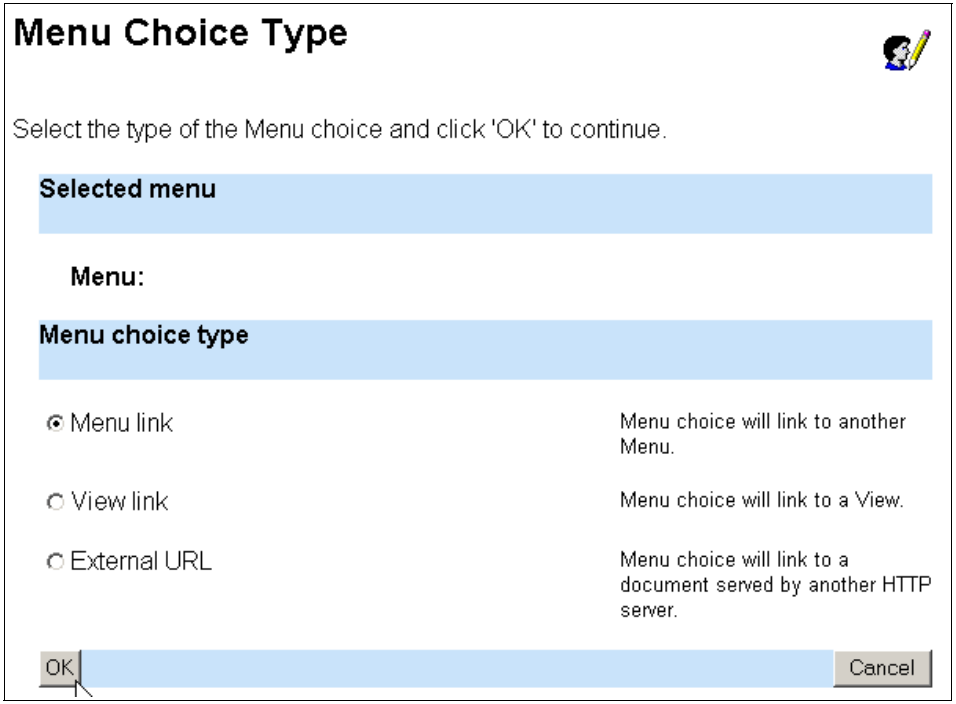


Figure 5-11 Menu Choice Type window

9. Click the **Target Menu** link to identify the menu to which our favorite will link (Figure 5-12).

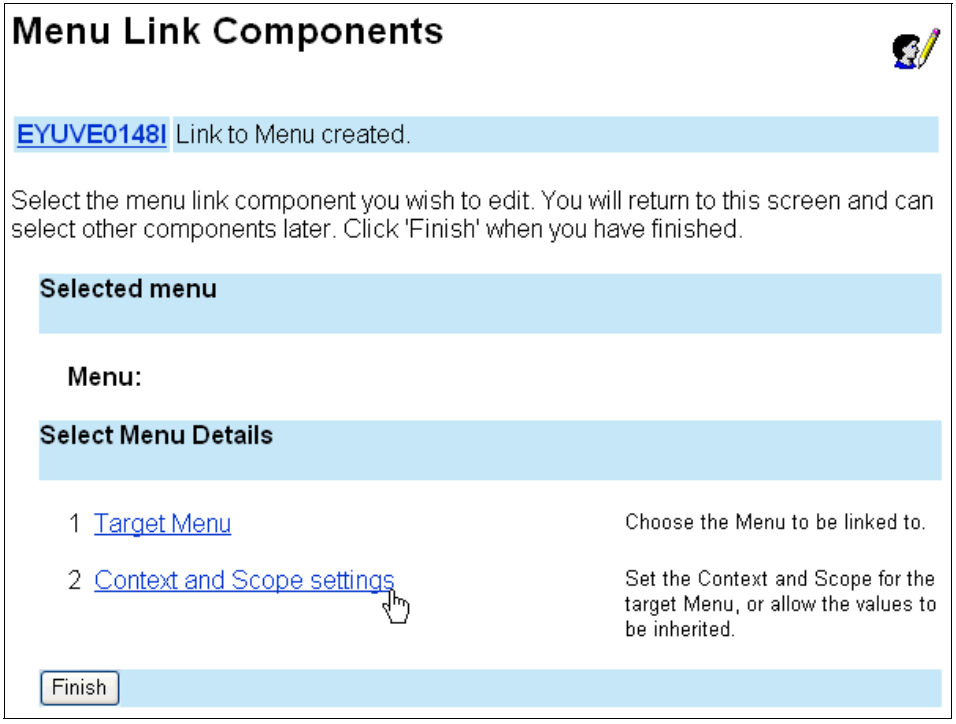


Figure 5-12 Menu Link Components window

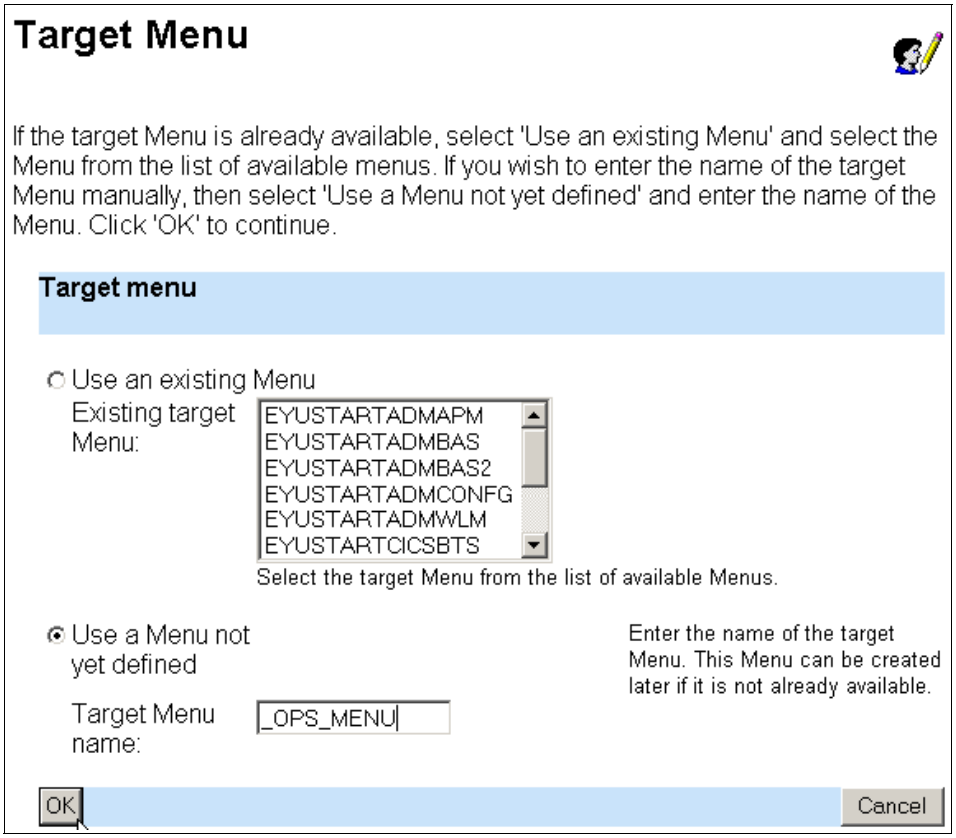


Figure 5-13 Target Menu window

Note: We create the menu to which our favorite links in one of the case studies later in this chapter. See Figure 5-18 on page 198 onwards.

10. Click **OK** to return to the Menu Link Components window (Figure 5-12 on page 191). We now select **Context and Scope settings** to set the default context, scope, and CMAS context for the menu.

11. For each option, we choose **Inherit from current Menu**. We then click **OK** to return to the Menu Link Components window (Figure 5-12 on page 191). Clicking **Finish** in each of the stacked windows, and **Save** in the Favorites Editor window (Figure 5-8 on page 187) stores our new favorite in the selected user object in the WUI repository.

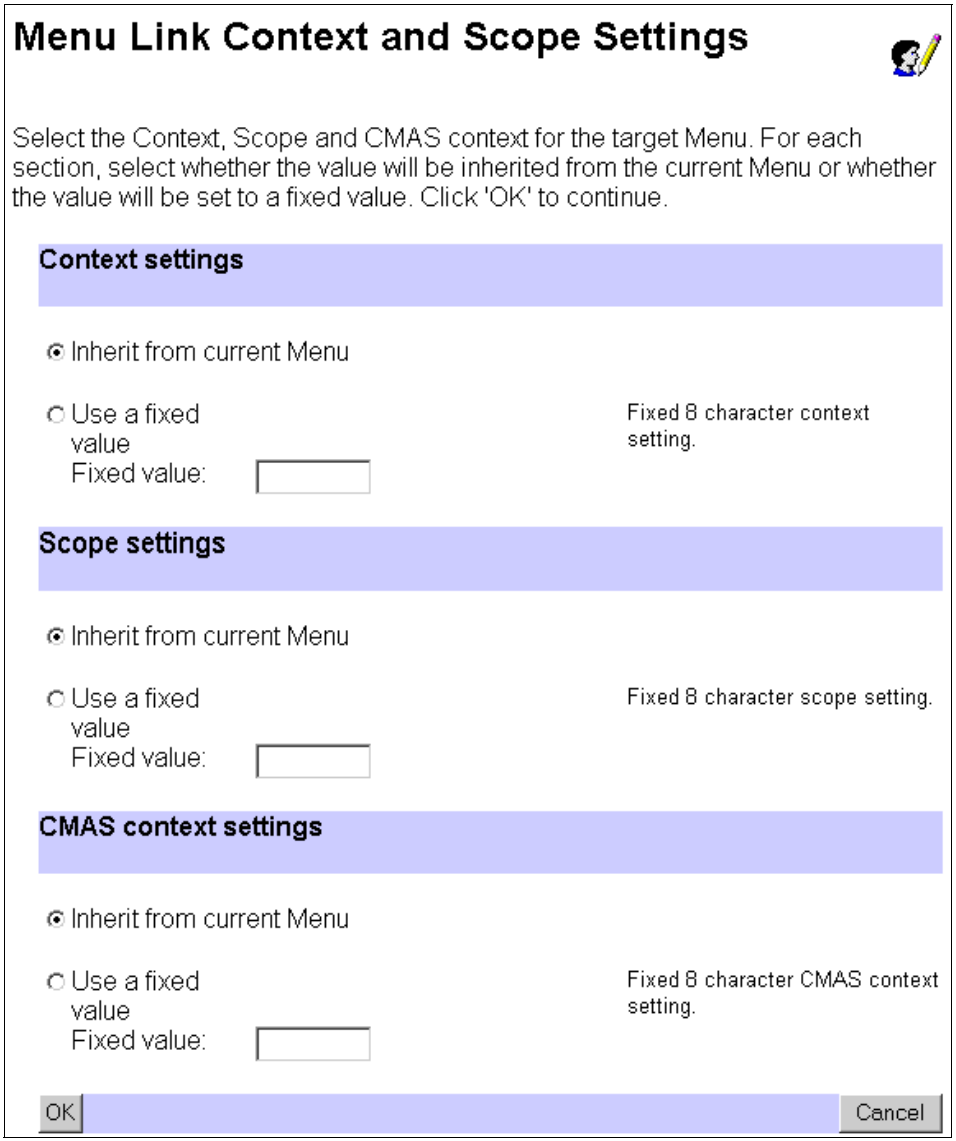


Figure 5-14 Menu Link Context and Scope Settings window

5.3 Using view editor to define new views and menus

A view set is a number of related views that are used together to manage the same managed object. A view is a display format that is used to interact in a particular way with the specified managed object. A view exists within a view set. Views can display information about CICS resources or CICSPlex SM definitions.

The view editor is a menu-driven tool that allows the creation and customization of view sets, views, and menus. Because the starter set distributed with CICSPlex SM contains view sets for all resource tables that can be managed by the TSO end user interface, these provide a good starting point for developing customized presentations for specific users.

The distributed view sets contain standard tabular and detail views, and all hyperlinks, action buttons, and confirmation panels needed to manage CICS and CICSPlex SM resources in a CICSplex. However, it may be desirable to limit the features accessible to specific users. For example, you may not want to include views for creation and installation of CICS resources through Business Application Services (BAS) in the menus seen by CICS operators.

You may also need to create specialized views displaying resource attributes in a different form than they are presented in the starter set views. Examples of customizing displays include adding warning lights or bar gauges for highlighting exceptional conditions, or creating tabular views displaying sets of attributes not displayed in the distributed views.

Creating a new menu or view set requires careful planning, especially if the target resource table contains more attributes than can be displayed conveniently in one detailed view (for example, TASK), or a wide and varied selection of available actions (for example, CICSRGN). For this reason it is often better to copy an existing menu or view set and customize the new object. However, creating small menus or view sets with limited function for specific situations may be practical.

Since the view sets and menus distributed in the starter set are write protected, to modify distributed views and menus the distributed objects must be copied and saved under user-defined names without write protection. Once this is done, you may modify or delete existing views or actions, or create custom views displaying resource attributes in new combinations.

5.3.1 Customizing an existing menu

In this example, we create a copy of the EYUSTARTMENU menu from the IBM-supplied set of menus, and customize it for use by CICS operators. We

remove the links to CICSPlex SM operations views and administration views, as these are not required to manage executing CICS regions. We create a new menu group titled *problem determination* to which we add links to several new views as they are created.

1. Begin by clicking **View Editor** (which you can only see if you are authorized to use it) in the navigation frame to open a new window containing the Web User Interface Editor.
2. Click the **Menus** link to enter the menu editor (Figure 5-15).

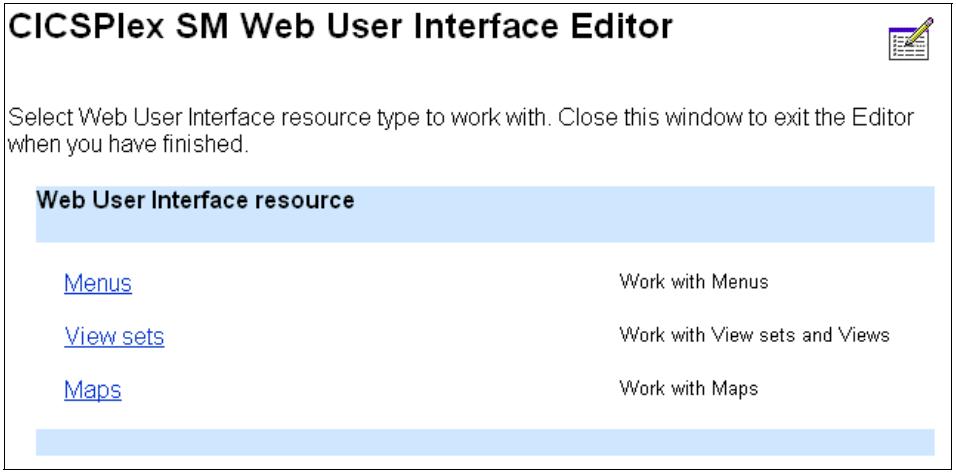


Figure 5-15 CICSPlex SM Web User Interface Editor entry window

3. Click the **Copy** link to create a new menu object by copying an existing menu (Figure 5-16).

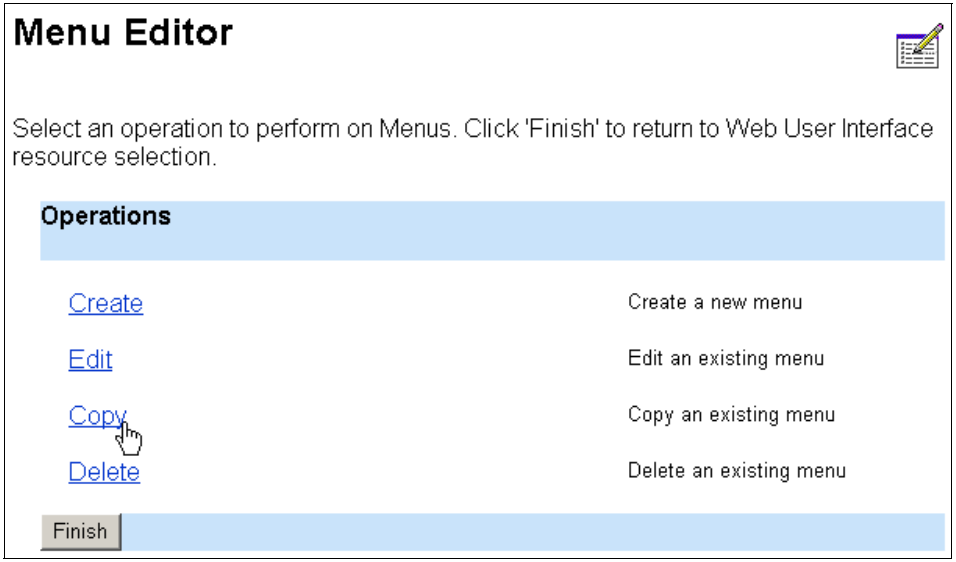


Figure 5-16 Menu Editor window

4. Select the desired source menu and type the name of the new menu to be created. _OPS_MENU is the name of the menu linked to by the favorite created in 5.2.2, “Creating a favorite using the user editor” on page 186. Click **OK** to create the new menu and return to the Menu Editor window. Note message EYUVE0025I confirming creation of the new menu object (Figure 5-17).

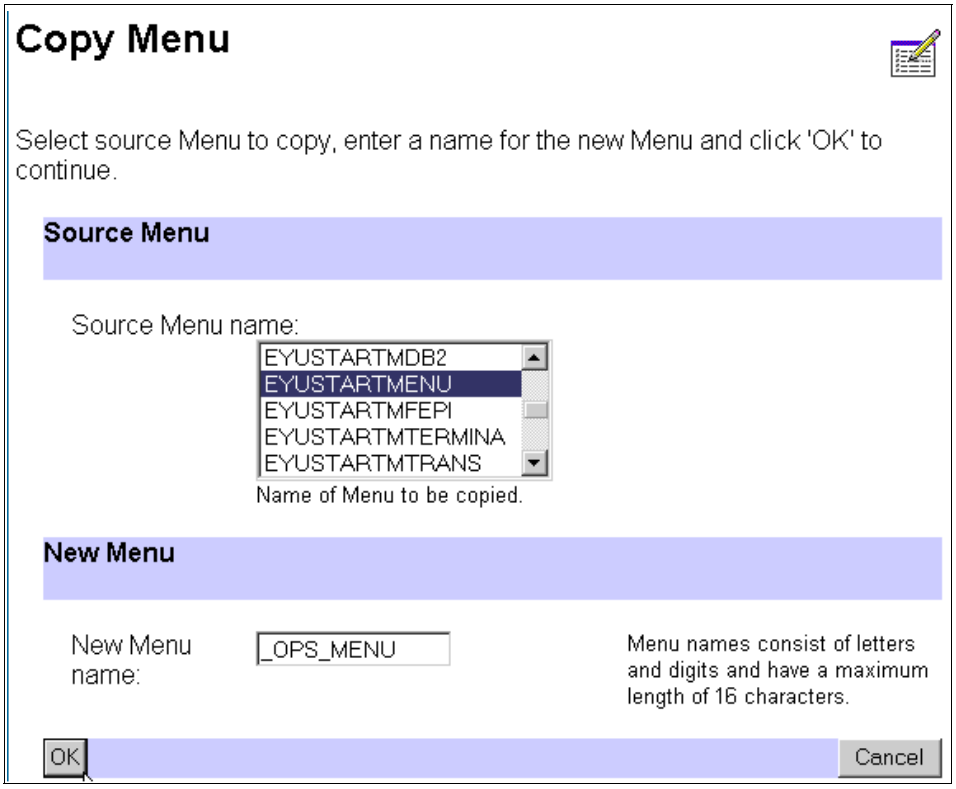


Figure 5-17 Copy Menu window

5. In the Menu Editor window (Figure 5-16 on page 196) click the **Edit** link to customize the newly created _OPS_MENU.

6. Choose **_OPS_MENU** from the Menu list box and click **OK** to proceed to the Menu Components window where we can select the components that we wish to modify (Figure 5-18).

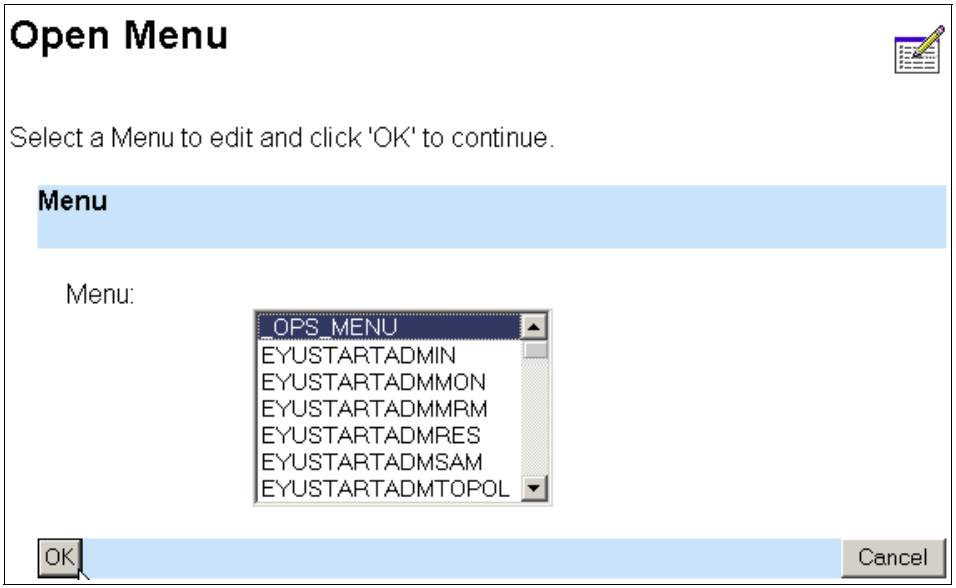


Figure 5-18 Open Menu window

7. Click the **Title, annotation and help text** link to display the Menu Title, Annotation and Help Text window (Figure 5-19).

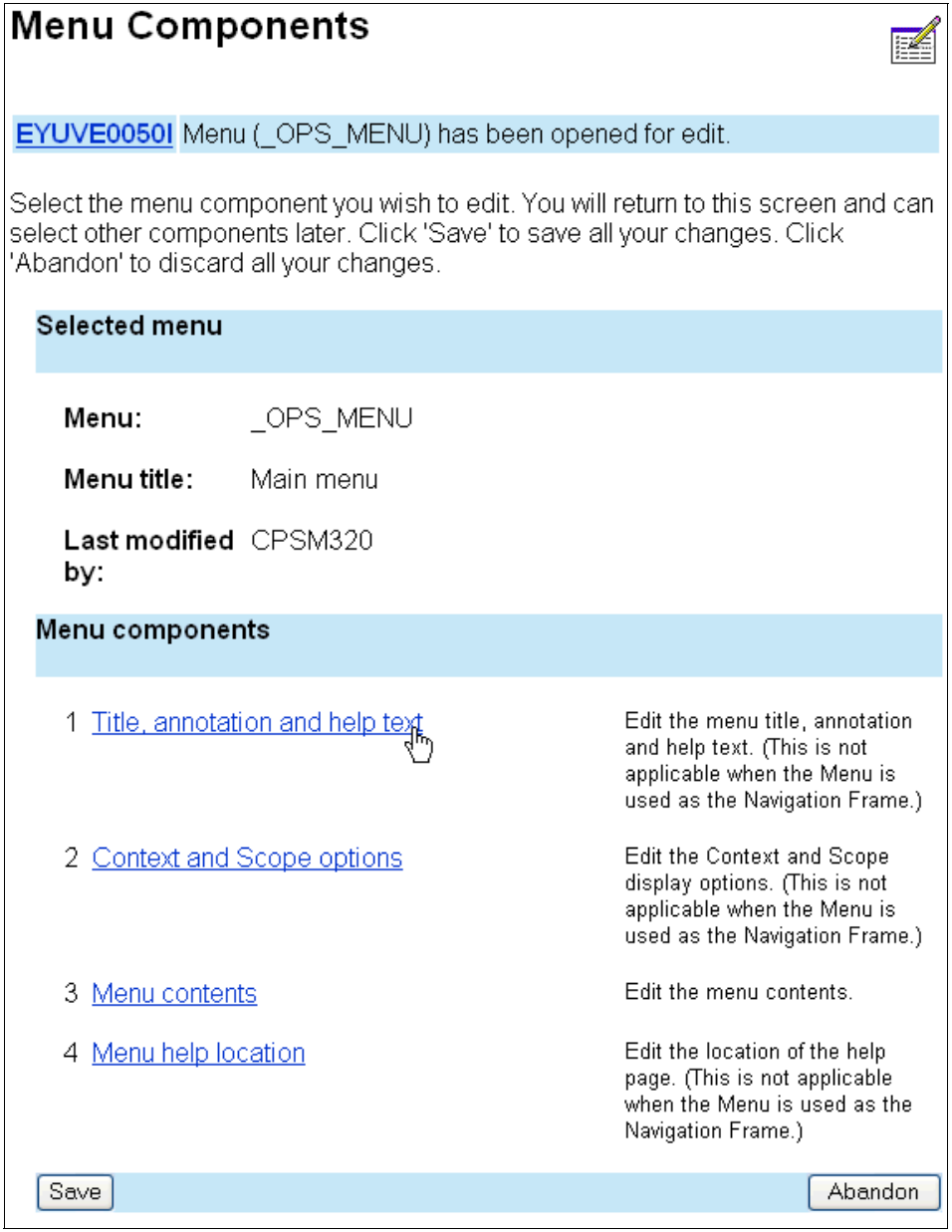


Figure 5-19 Menu Components window

8. Change the menu title from Main menu to `Main operator's menu`. We do not need to change the annotation string or the help text. Click **OK** to return to the Menu Components window (Figure 5-19 on page 199).

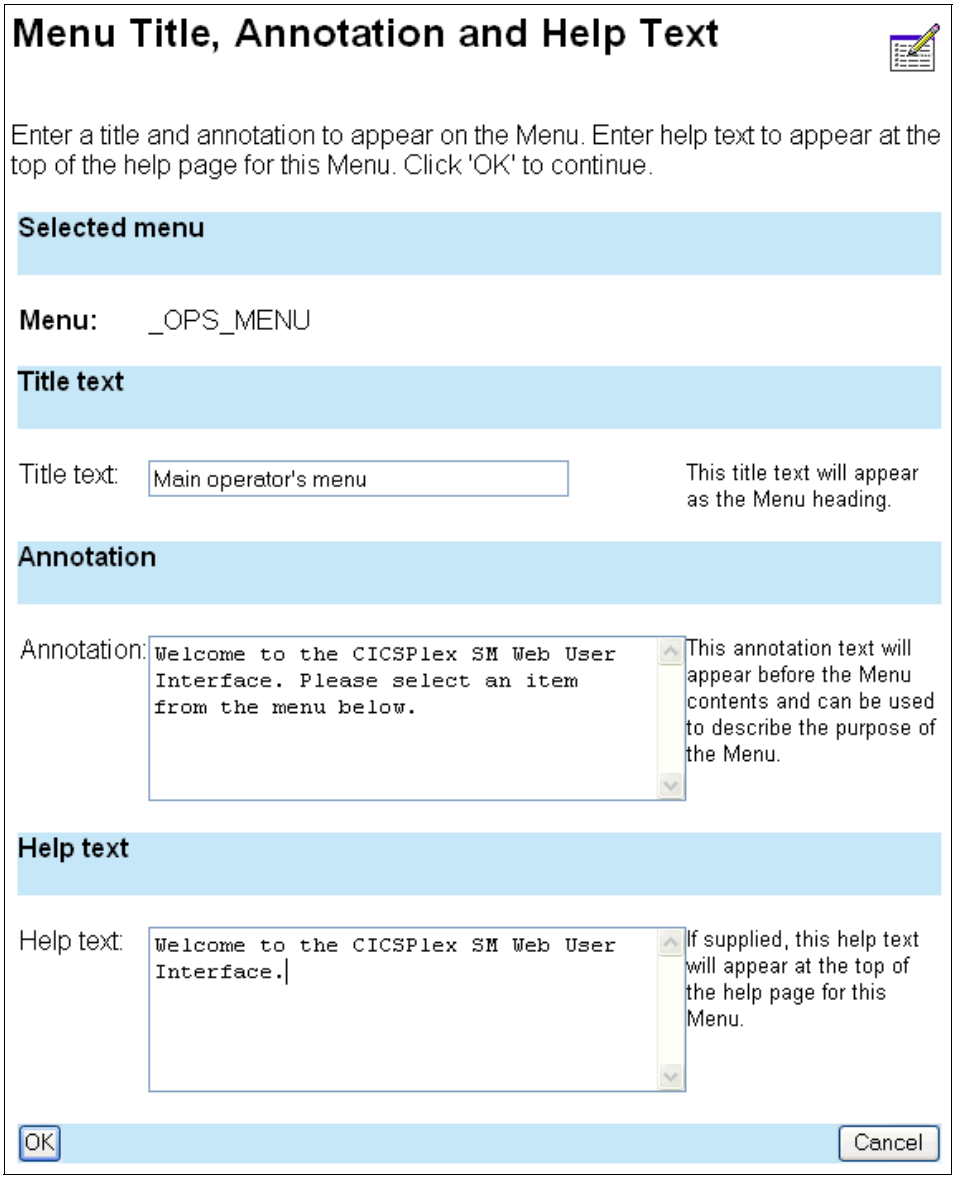


Figure 5-20 Menu Title and Annotation window

9. We do not need to change the default context and scope values for the menu. Next, click the **Menu contents** link to remove the unwanted links and add our new menu group.

10. Choose **View menus** and click **Insert** to insert our new menu group before the View menus group (Figure 5-21).

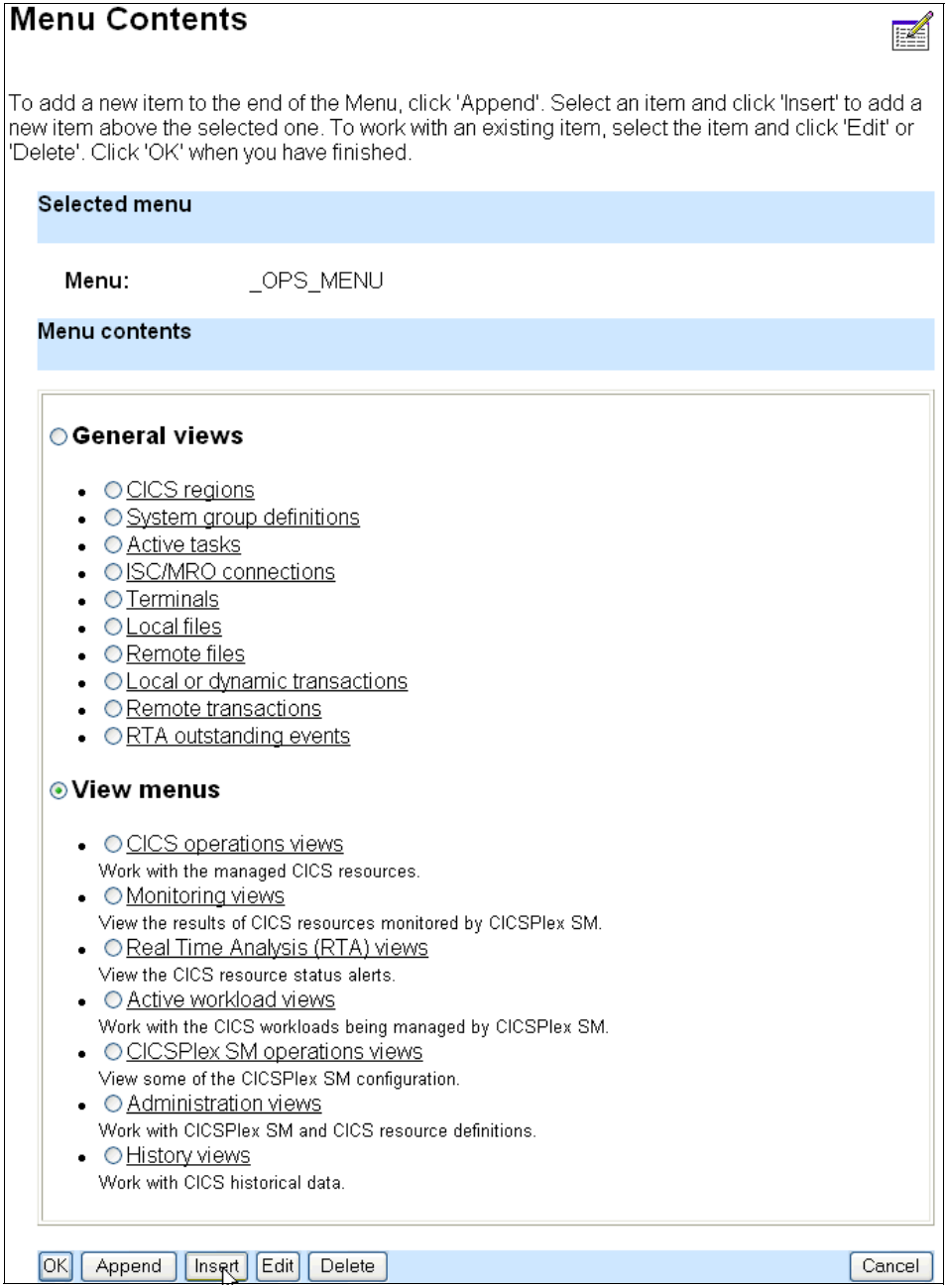


Figure 5-21 Menu Contents window

11. Choose **Group title** and click **OK** (Figure 5-22).

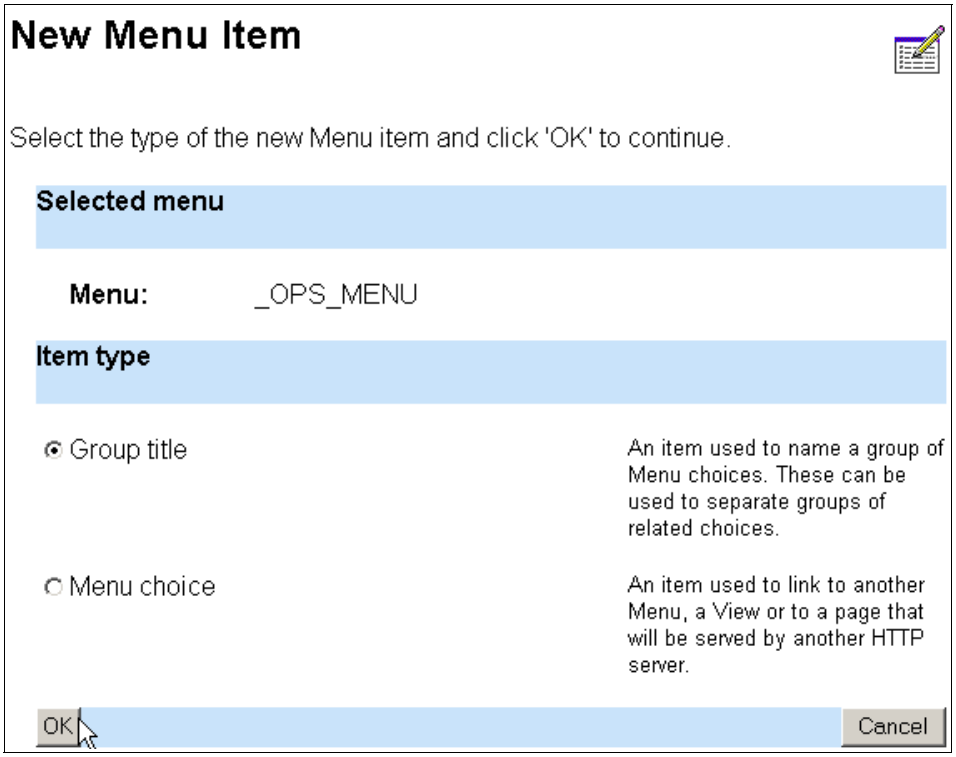


Figure 5-22 New Menu Item window

12. Type `Problem Determination` and click **OK**. The Menu Contents window is redisplayed showing the new menu group (Figure 5-23).

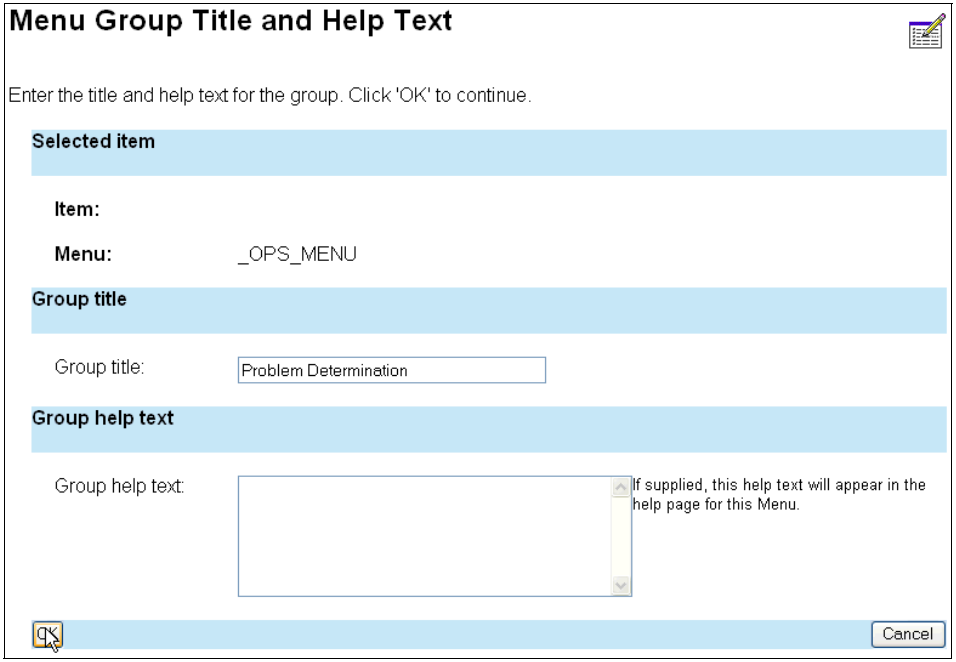


Figure 5-23 Menu Group Title window

13. In the Menu Contents window (Figure 5-21 on page 202) choose **Administration views** and click **Delete**. In the confirmation window click **OK**. Repeat for CICSPlex SM operation views.

14. In the Menu Contents window (Figure 5-21 on page 202) click **OK** to return to the Menu Components window (Figure 5-19 on page 199). Click **Save** to save the modified menu in the WUI repository.

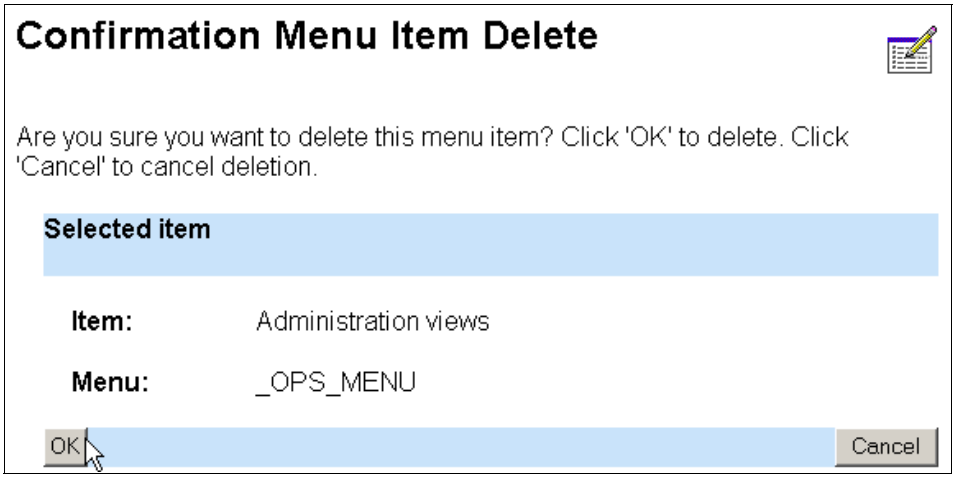


Figure 5-24 Confirmation Menu Item Delete window

5.3.2 Creating a new view set by copying an existing object

As a tool to assist the CICS operator in detecting and analyzing bottlenecks we want to create a special tabular view of TASK resources displaying additional fields not in the default tabular view. In addition, we want to modify the default filters to restrict selection to suspended CICS tasks (RUNSTATUS=SUSPENDED). In order to keep the standard views, hyperlinks, and actions, we want to copy the existing EYUSTARTTASK view set and create the new SUSPENDED tabular view by customizing a copy of the default tabular view.

1. Open the View Editor window by clicking the **View editor** link in the navigation frame. In the main editor window (Figure 5-15 on page 195) click the **View sets** link.

2. In the View Set Editor window click the **Copy** link to create a copy of the EYUSTARTTASK view set called _OPS_TASK (Figure 5-25).

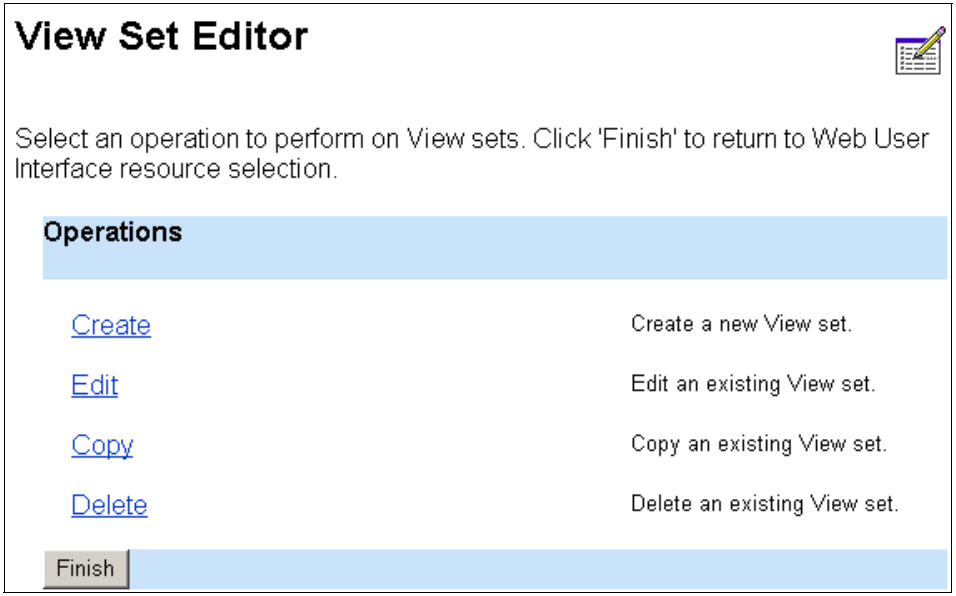


Figure 5-25 View Set Editor window

3. In the Copy View Set window, choose **EYUSTARTTASK** from the Source view set name list box. Type `_OPS_TASK`, the name of our copy, in the New view set name edit box. Click **OK** to return to the View Set Editor window (Figure 5-26).

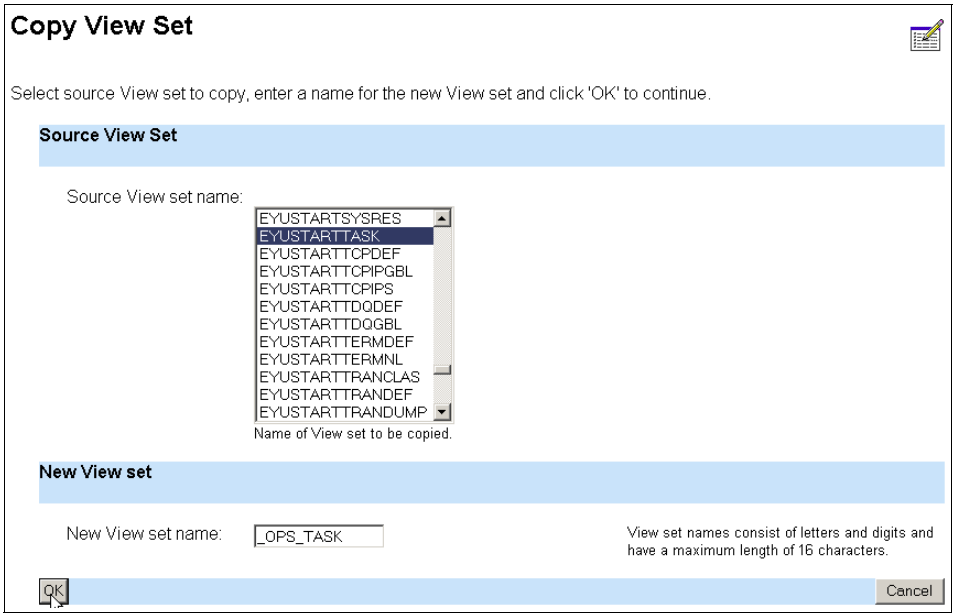


Figure 5-26 C

4. In the View Set Editor window (Figure 5-25 on page 206), click the **Edit** link to edit the new _OPS_TASK view set.

5. Choose **_OPS_TASK** from the View set list box in the Open View Set window. Click **OK** to continue (Figure 5-27).

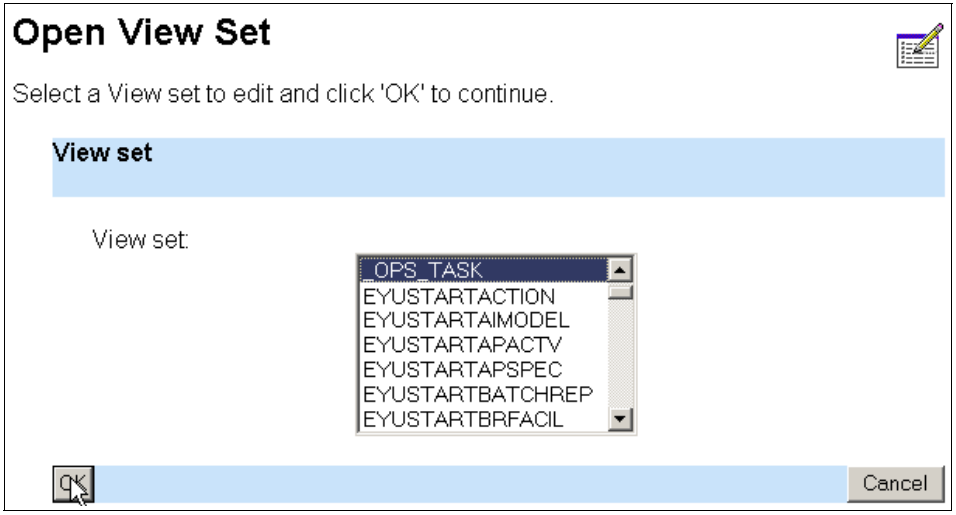


Figure 5-27 Open View Set window

6. In the View Set Contents window choose the **TABULAR** view and click **Copy** (Figure 5-28).

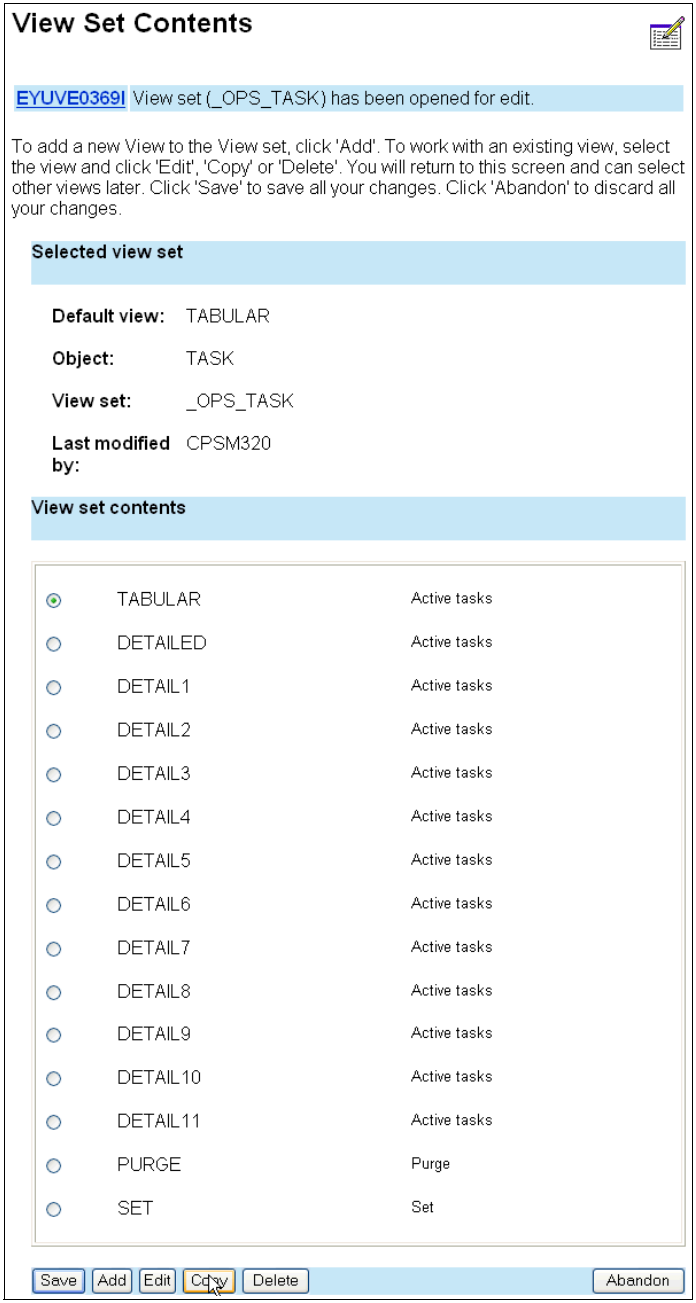


Figure 5-28 View Set Contents window

7. Type the new view name, SUSPENDED, in the New view name edit box (Figure 5-29). Click **OK** to return to the View Set Contents window (Figure 5-28 on page 209). The new SUSPENDED view has been added to the end of the list of views. Choose **SUSPENDED** and click **Edit** to continue.

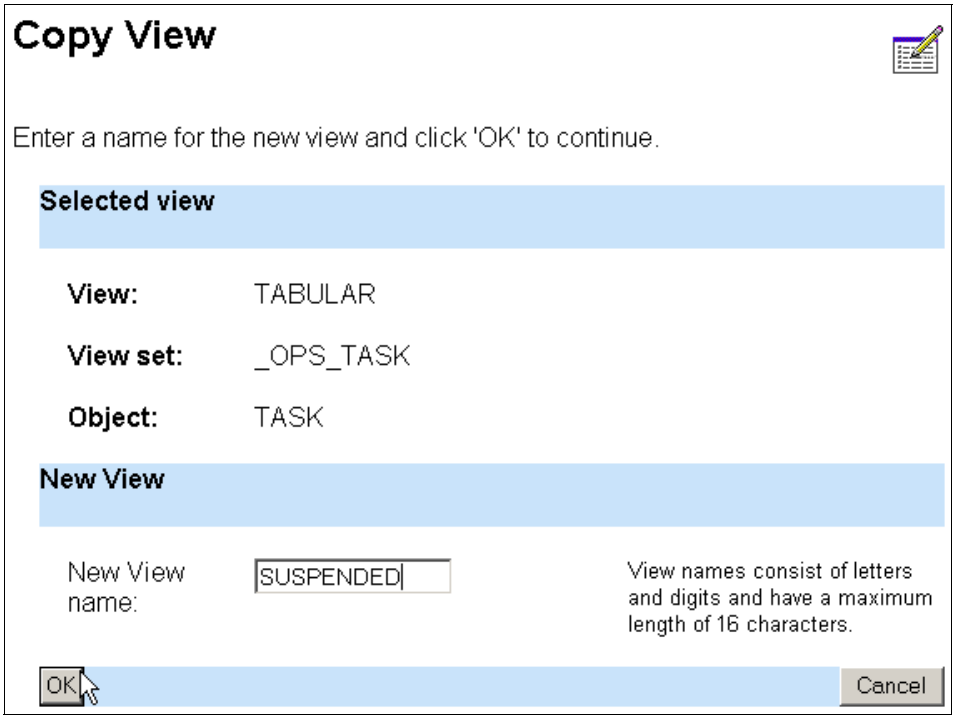


Figure 5-29 Copy View window

8. The Tabular View Components window is the starting point for all of the changes that we will be making to customize our new view. Begin by clicking the **Table contents** link (Figure 5-30).

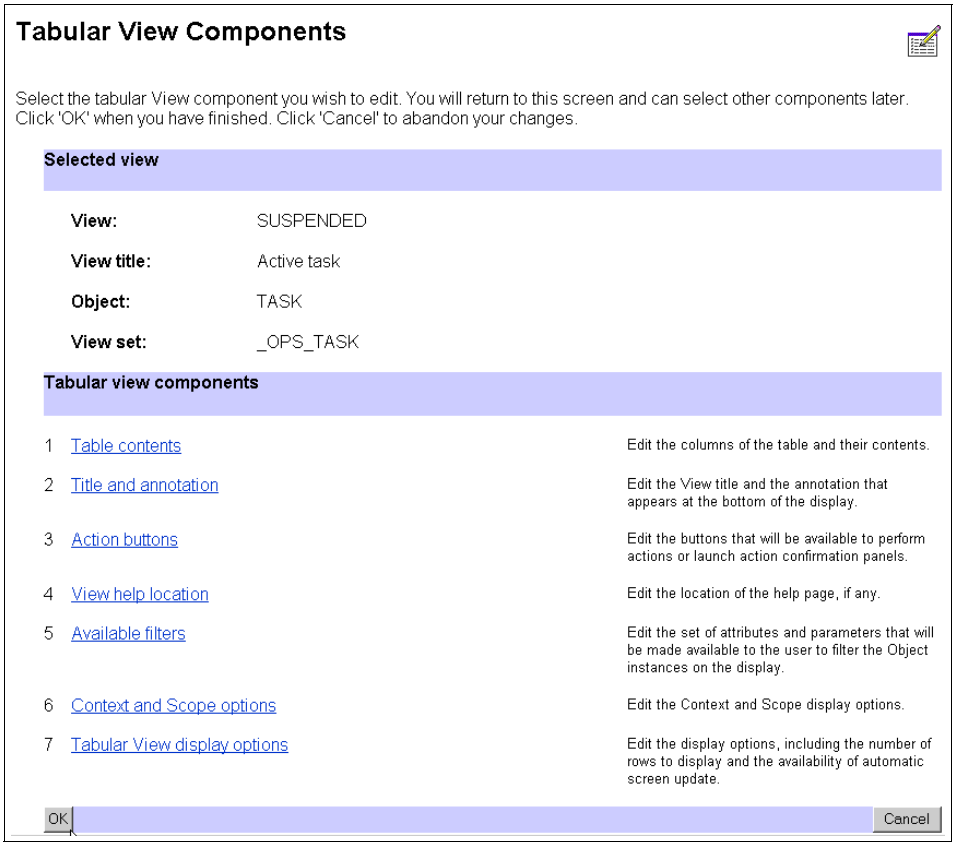


Figure 5-30 Tabular View Components window

9. We begin by inserting Reason task is suspended (SUSPENDTYPE), Resource for which task is waiting (SUSPENDVALUE), and Time task has been suspended (SUSPENDTIME) between Dispatch status (RUNSTATUS) and User ID (USERID). Choose **User ID (USERID)** and click **Insert** (Figure 5-31).

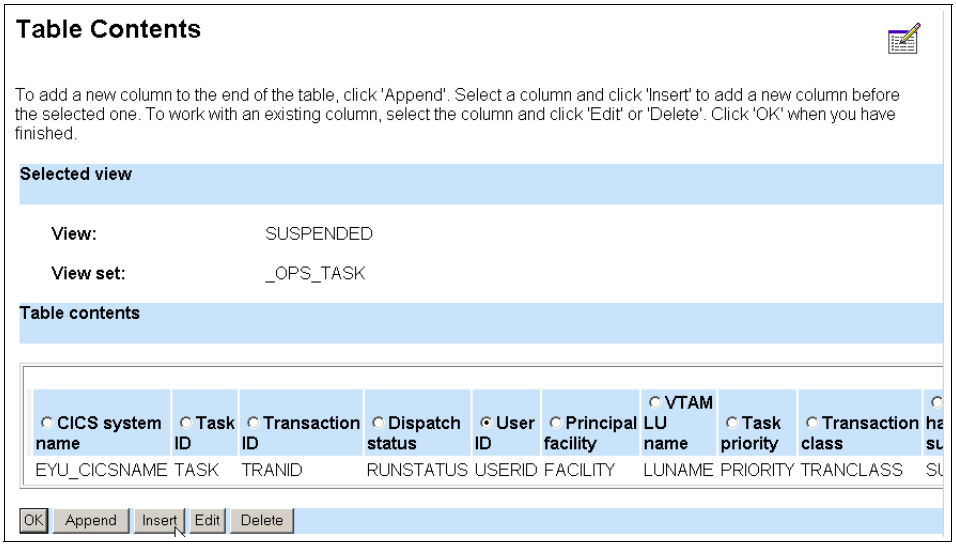


Figure 5-31 Table Contents window

10. For most attributes we have a choice of formatting options. Text attributes, for example, can be displayed as normal character strings (Normal), hexadecimal strings (Hexadecimal), or expanded character and hexadecimal (Advanced). The available formatting options are shown along with attribute names and descriptions in the Attribute list box. Choose **SUSPENDTYPE (Normal)** in the Attribute list box and click **OK** to continue (Figure 5-32).

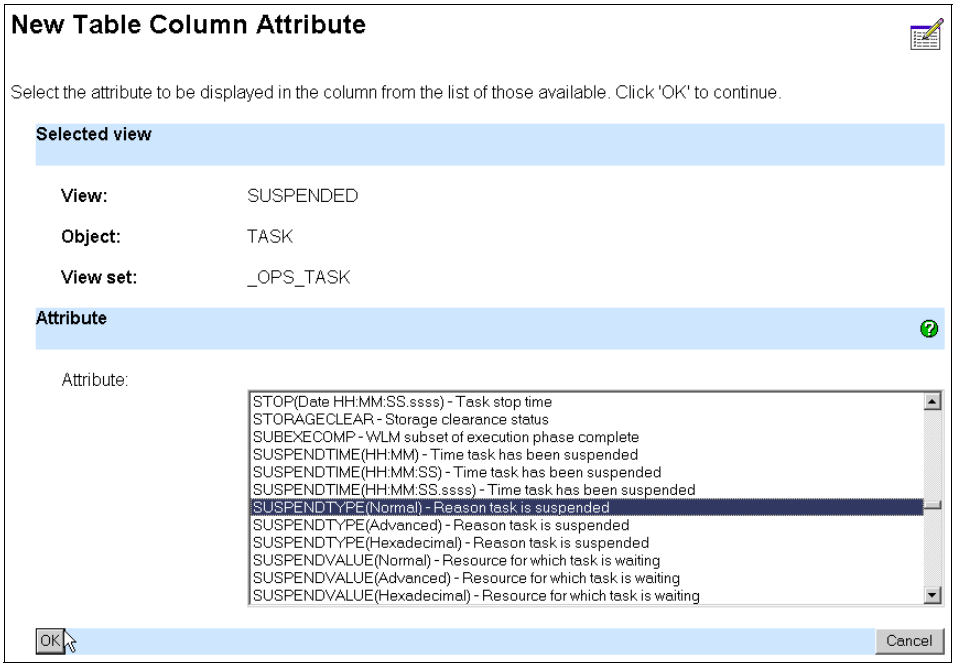


Figure 5-32 New Table Column Attribute window

11. We do not need to modify any of the components of the column, so click **Finish** in the Table Column Components window to return to the Table Contents window (Figure 5-33).

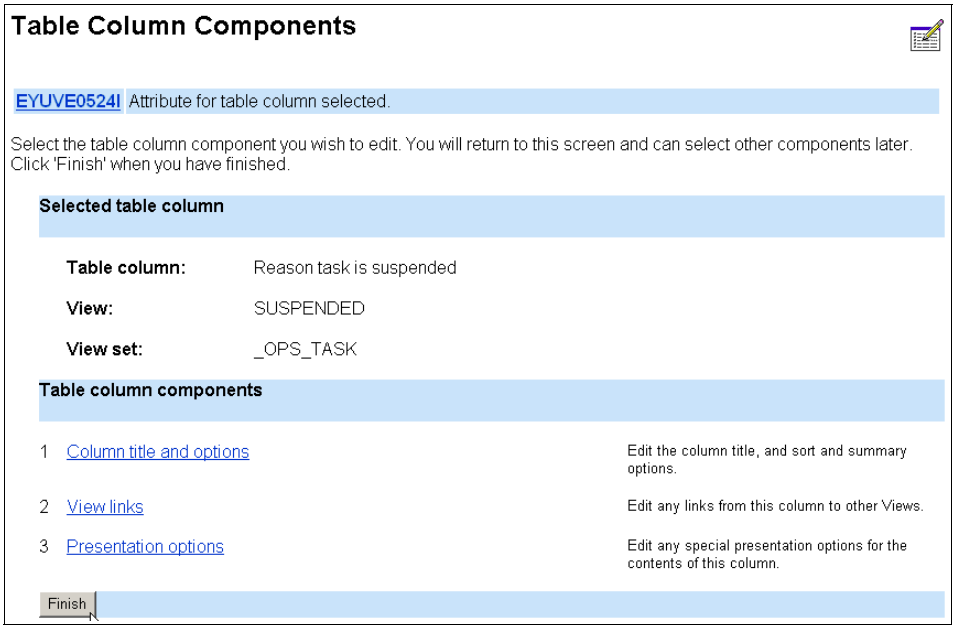


Figure 5-33 Table Column Components window

12. Repeat steps 9 on page 212 through 11, choosing **SUSPENDVALUE (Normal)** and **SUSPENDTIME (HH:MM:SS)** from the Attribute list box.

13. Time task has been suspended (SUSPENDTIME) was already displayed in the EYUSTARTTASK TABULAR view. We now need to remove the attribute from its original position. Scroll to the right in the Table Contents window (Figure 5-31 on page 212) until the original field “Time task has been suspended (SUSPENDTIME)” is visible. Choose it by clicking the radio button and click **Delete**. (You may have to scroll back to the left to see the Delete button.)

14. Click **OK** in the Confirm Table Column Delete window to remove the column (Figure 5-34).

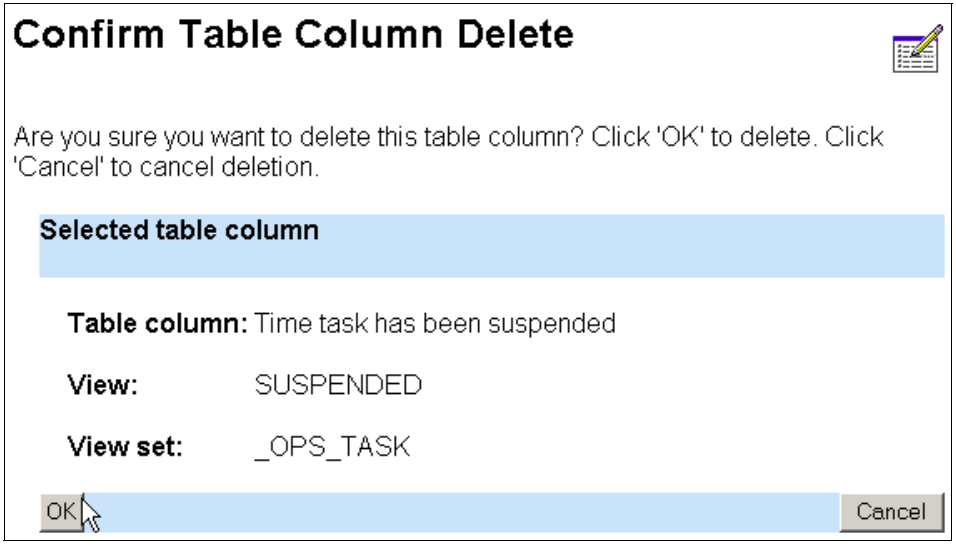


Figure 5-34 Confirm Table Column Delete window

15. Click **OK** in the Table Contents window (Figure 5-35) to return to the Tabular View Components window (Figure 5-30 on page 211).

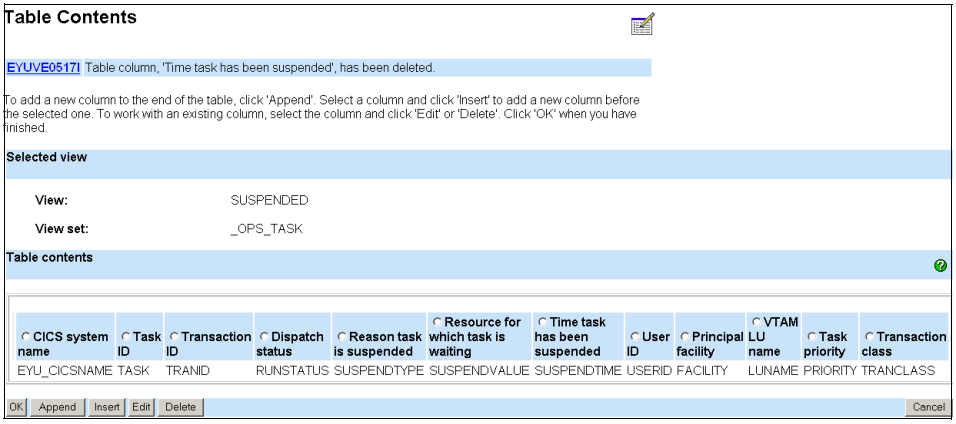


Figure 5-35 Table Contents window (reprise)

16. In the Tabular View Components window click the **Title, annotation and help text** link.

17. Type the view title, `Suspended tasks`, and the annotation, `Application tasks in SUSPENDED state`, in the edit boxes. In this example help text has also been added. This text is displayed at the top of the help screen for the view. Click **OK** to return to the Tabular View Components window (Figure 5-36).

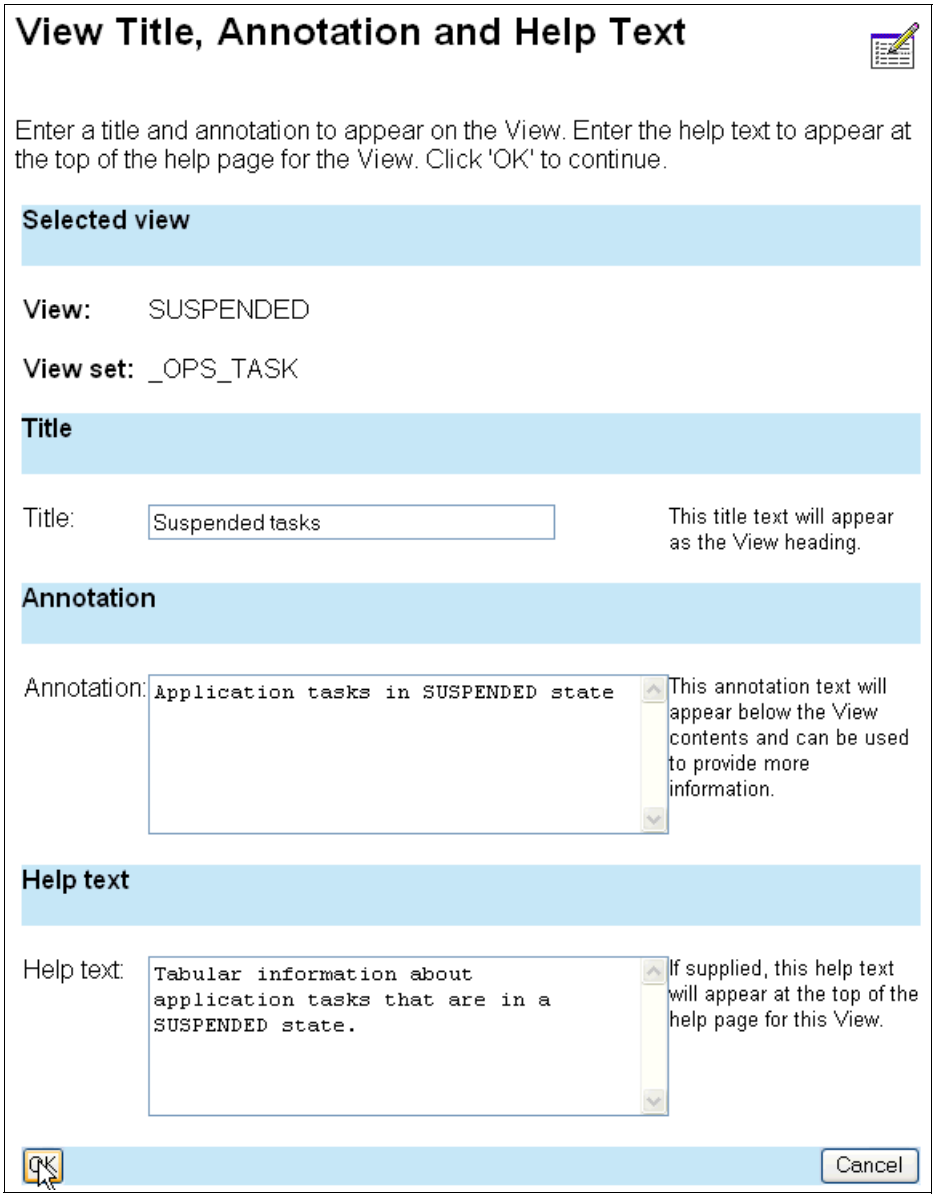


Figure 5-36 View Title, Annotation and Help Text window

18. We do not need to modify the actions buttons that were inherited from the TABULAR view, and we do not need to alter the view help location, as we will use the default view help. To define filters, click the **Available filters** link in the Tabular View Components window (Figure 5-30 on page 211).

19. The TABULAR view, which we copied to initialize the SUSPENDED view, had three filters defined. We do not need to filter on task ID, so in the Available Filters window, choose **TASK** and click **Delete** (Figure 5-37).

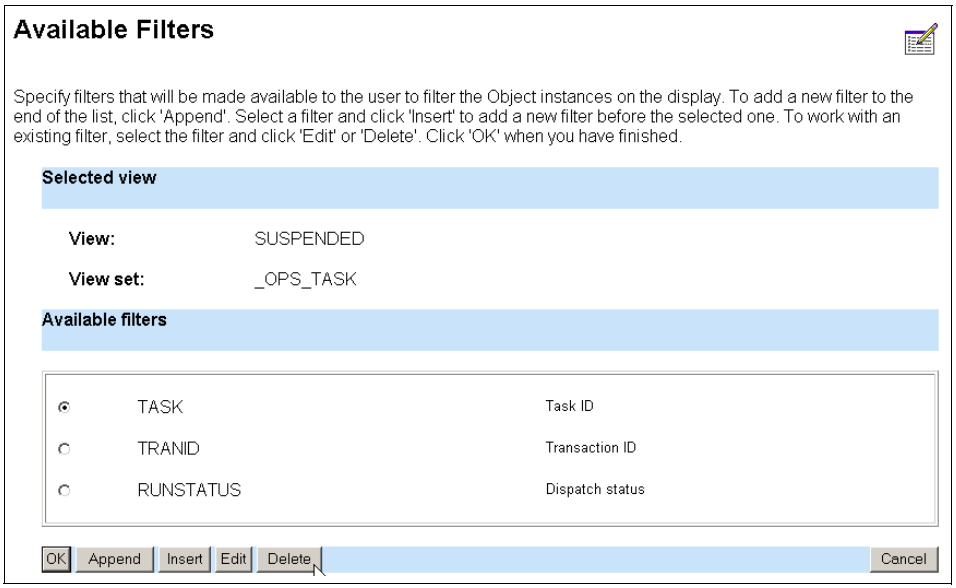


Figure 5-37 Available Filters window

20. Click **OK** in the Confirm Filter Delete window (Figure 5-38).

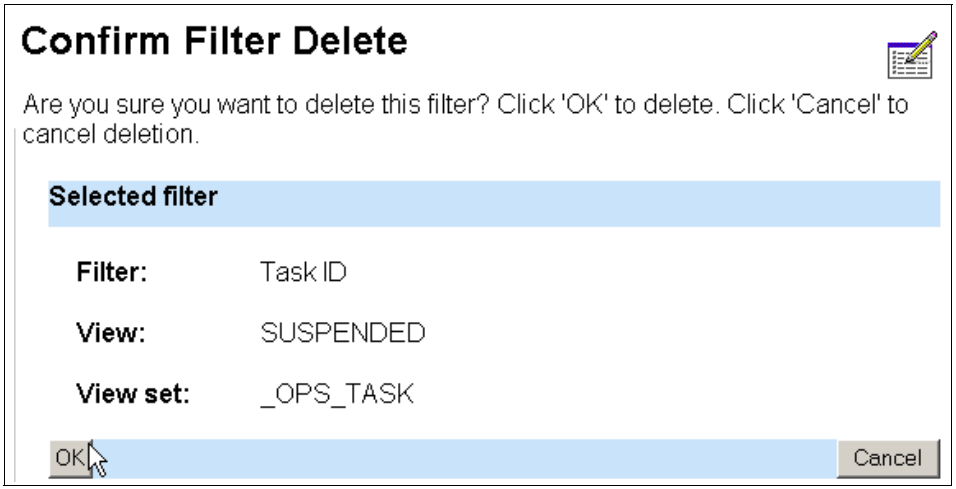


Figure 5-38 Confirm Filter Delete window

21. We need to edit the list of available values for the RUNSTATUS attribute to limit selection to suspended tasks. Choose **RUNSTATUS** and click **Edit**.

22. Click **OK** to edit the selection list for this filter (Figure 5-39).

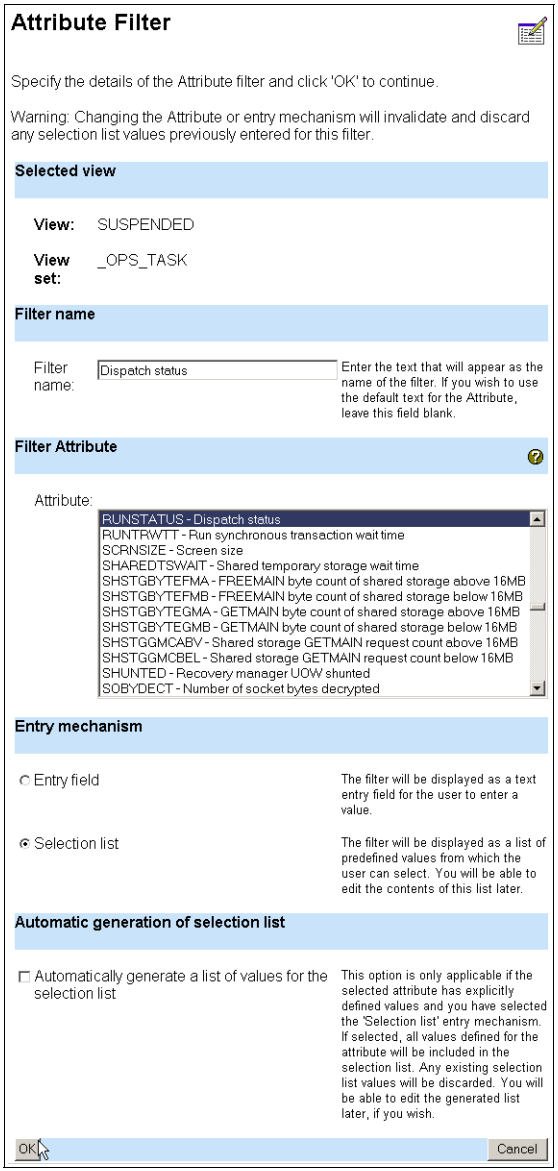


Figure 5-39 Attribute Filter window

23. In the Selection List Values window, choose **DISPATCHABLE** and click **Delete** (Figure 5-40).

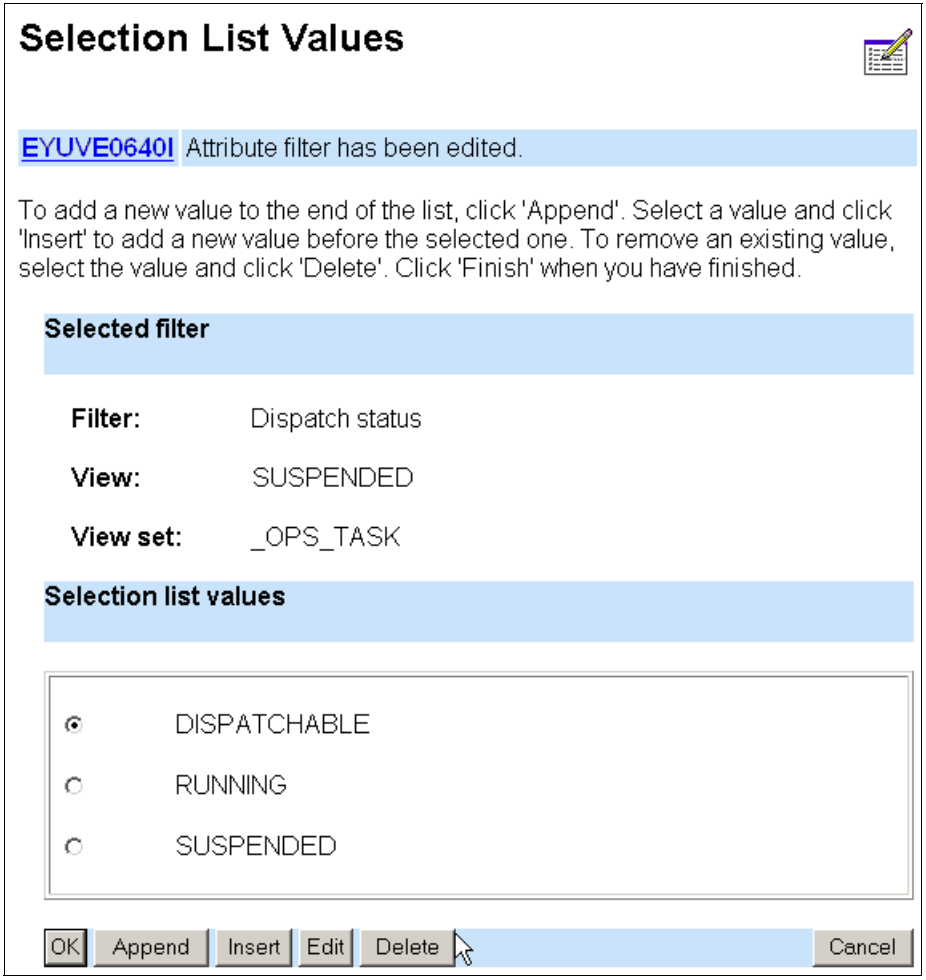


Figure 5-40 Selection List Values window

24. Click **OK** to confirm deletion of DISPATCHABLE from the filter selection list (Figure 5-41).

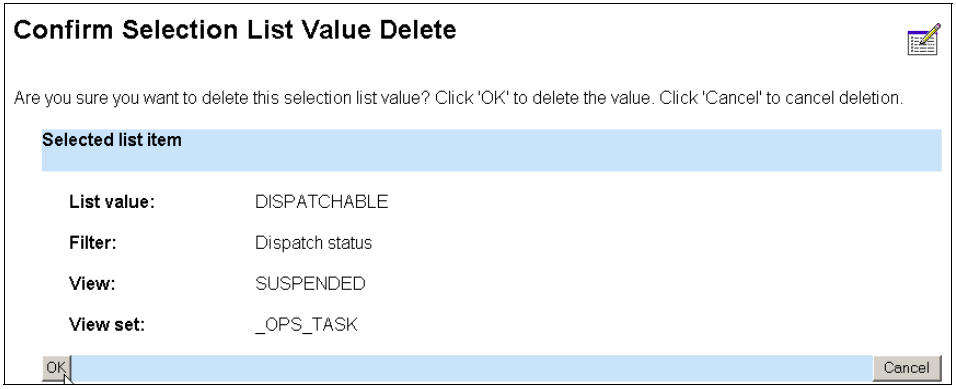


Figure 5-41 Confirm Selection List Value Delete window

25. Repeat steps 23 on page 220 through 24 for RUNNING.

26. Click **OK** in the Selection List Values window (Figure 5-42).

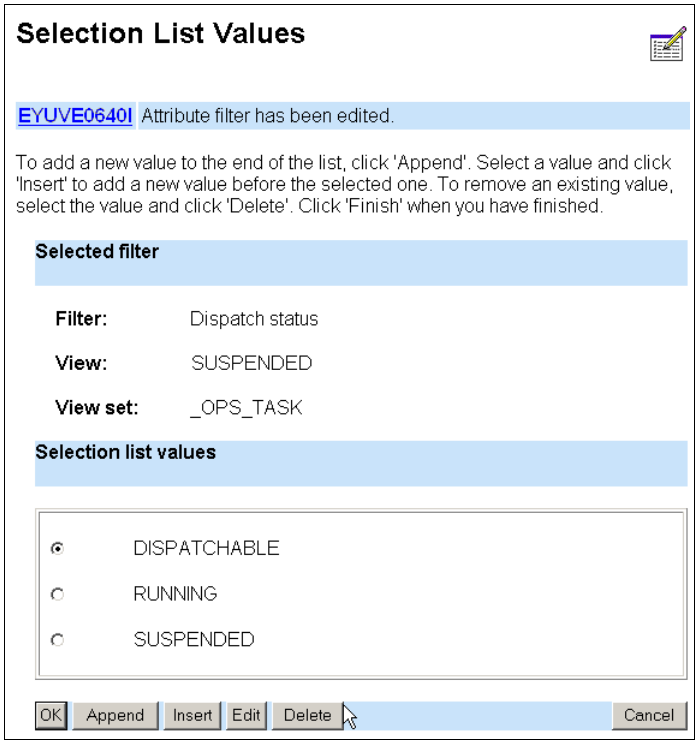


Figure 5-42 Selection List Values window (reprise)

27. Click **OK** in the Available Filters window (Figure 5-42) to return to the Tabular View Components window.

28. In the Tabular View Components window click the **Tabular View display options** link.

29. Choose **Automatic refresh available** and set automatic refresh delay to 15 (Figure 5-43). Click **OK** to return to the Tabular View Components window (Figure 5-30 on page 211).

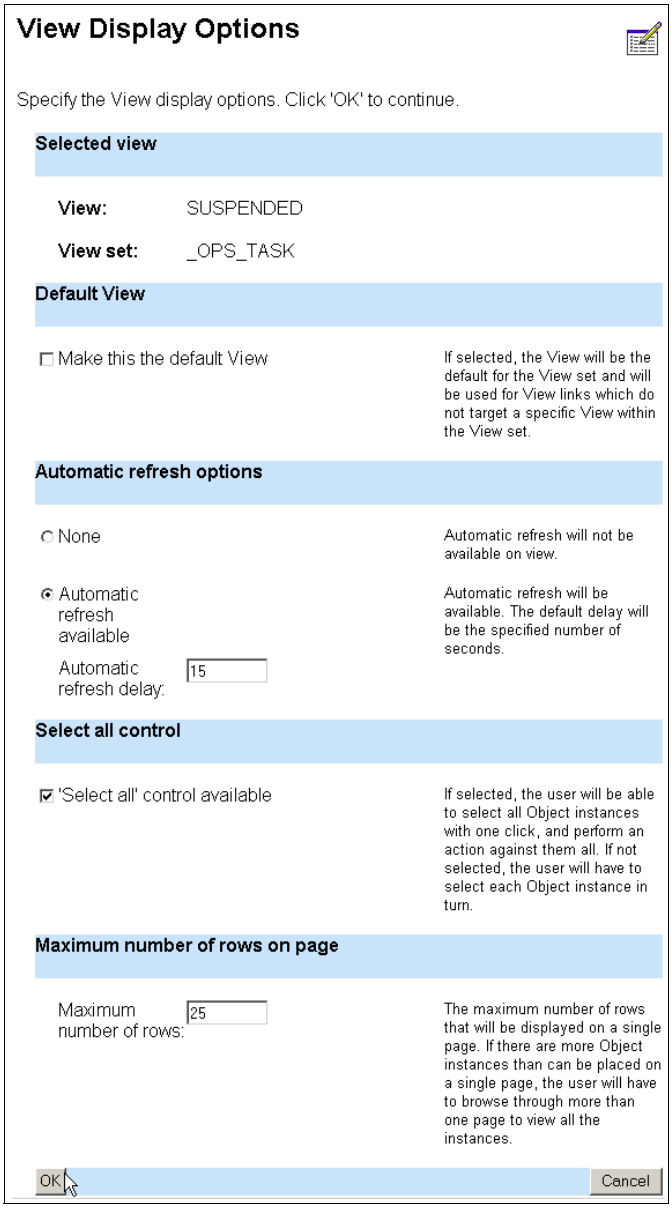


Figure 5-43 View Display Options window

30. In the Tabular View Components window click **OK** to return.

31. In the View Set Contents window click **Save** to store the edited view set in the WUI repository.

5.3.3 Adding a new view to a menu

In the previous section we created a copy of the EYUSTARTTASK view set and added a new tabular view called SUSPENDED, which displays information about suspended application tasks. We now want to add a link to this view to the _OPS_MAIN menu created in 5.3.1, “Customizing an existing menu” on page 194.

1. Open the View Editor window by clicking the **View editor** link in the navigation frame. In the main view editor window (Figure 5-15 on page 195) click the **Menus** link. Click **Edit** to edit an existing menu, choose **_OPS_MENU** from the list box in the Open Menu window (Figure 5-18 on page 198), and click **OK**. Click the **Menu contents** link in the Menu Components window (Figure 5-19 on page 199) to add a link to the menu.

2. Select **View menus** and click **Insert** to add a new menu item between Problem Determination and View menus (Figure 5-44).

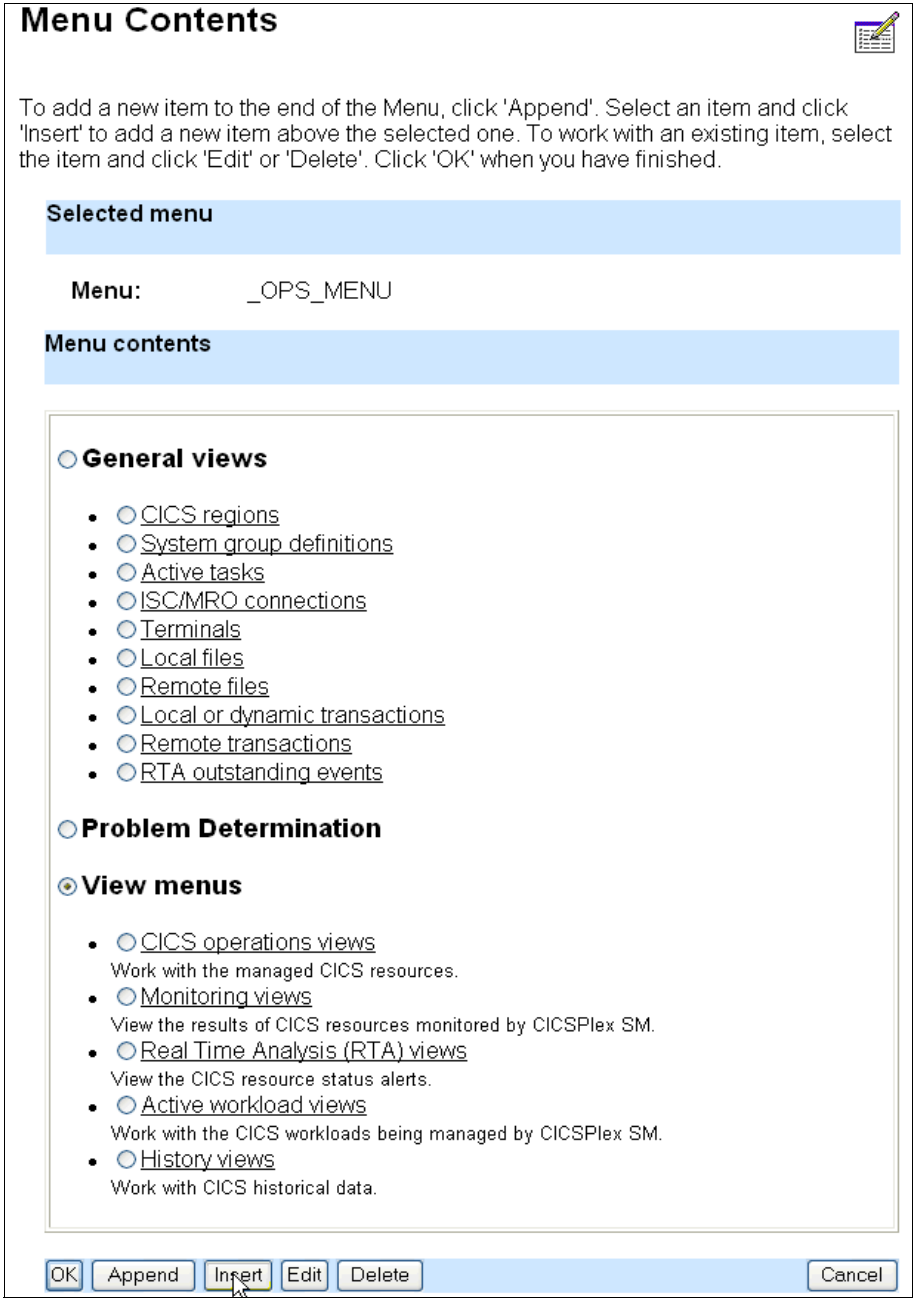


Figure 5-44 Menu Contents window (reprise)

3. Select **Menu choice** and click **OK** (Figure 5-45).

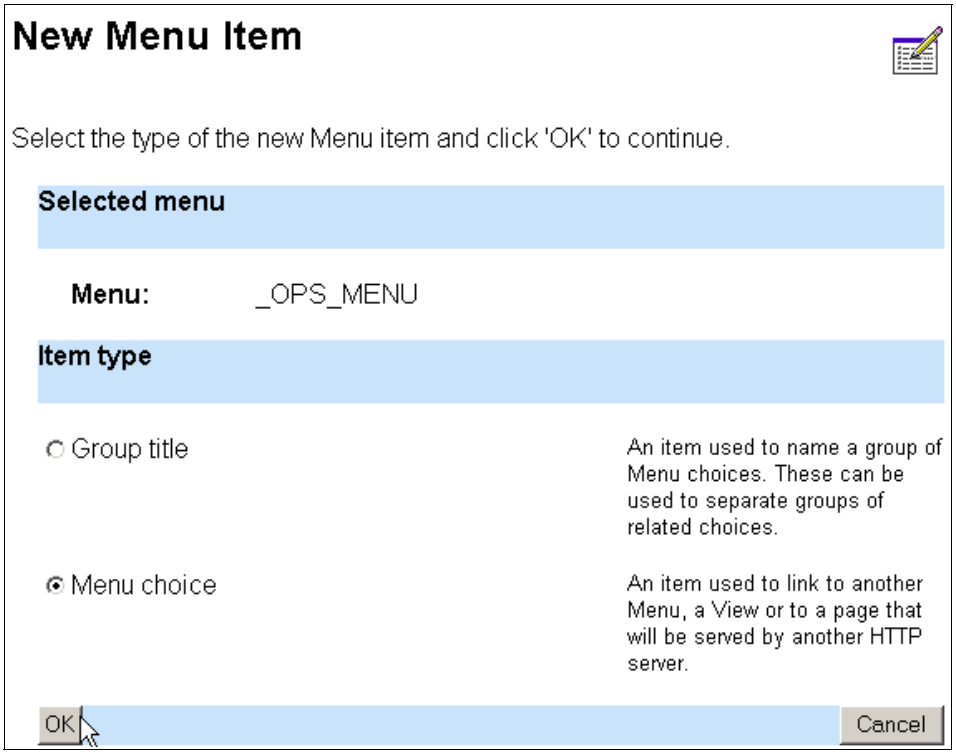


Figure 5-45 New Menu Item window (reprise)

4. In the Menu Choice Components window click the **Title, annotation and help text** link. The Menu Choice Title and Annotation window is then displayed (Figure 5-46).

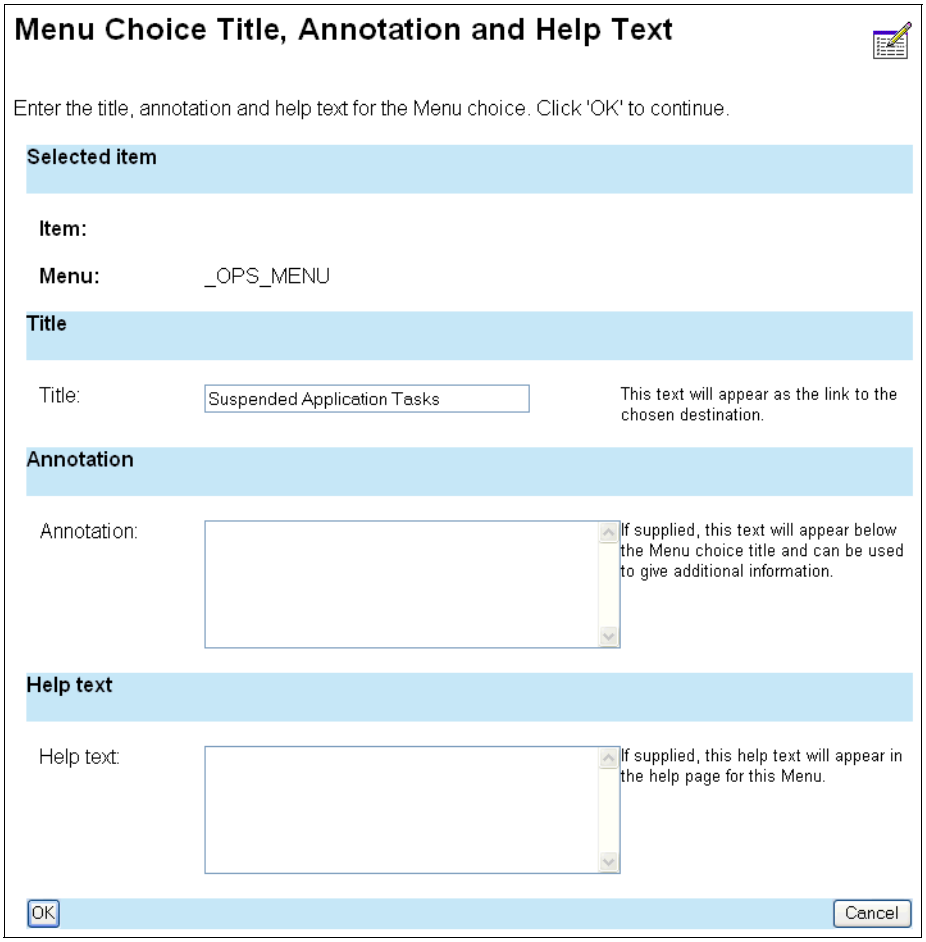


Figure 5-46 Menu Choice Title and Annotation window

5. Type the title that will appear in the menu. In this case, we choose not to add an annotation string or any help text for the menu. Click **OK**.
6. Click the **Destination** link in the Menu Choice Components window. The Menu Choice Type window is then displayed.

7. On the Menu Choice Components window select **View link** and click **OK** (Figure 5-47).

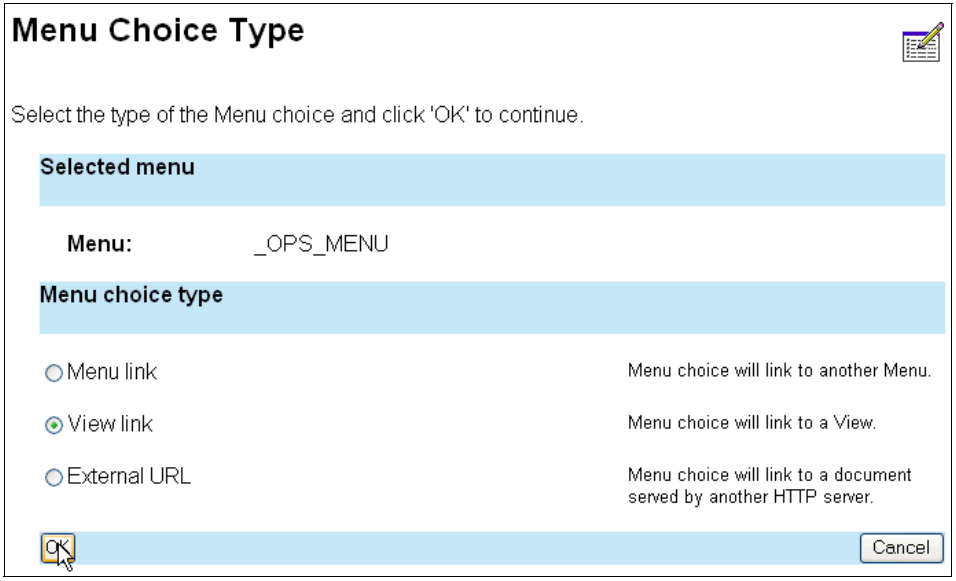


Figure 5-47 Menu Choice Type window (reprise)

8. Select the **_OPS_TASK** view set and click **OK** (Figure 5-48).

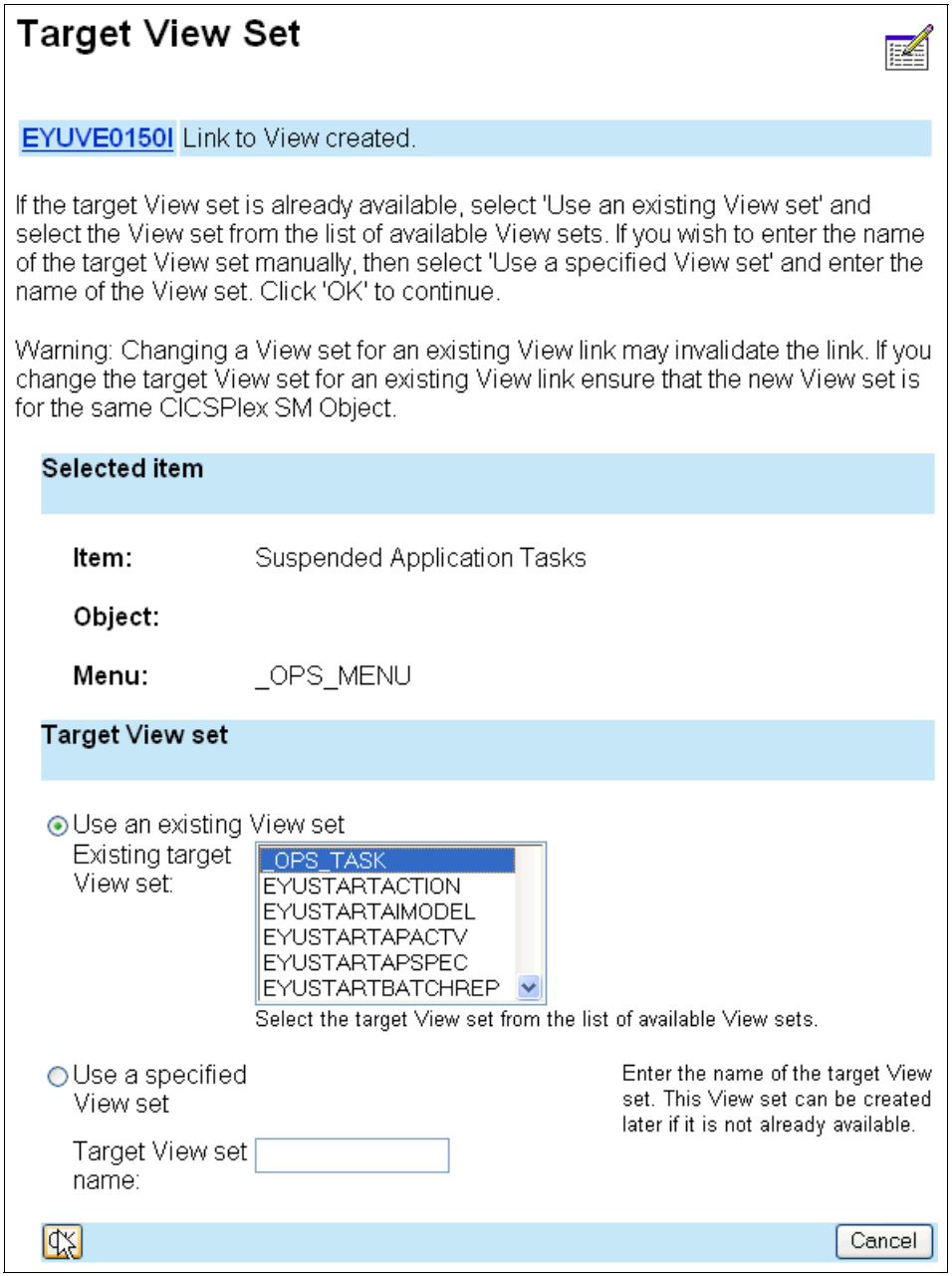


Figure 5-48 Target View Set window

9. On the Confirm Object for View Set screen, ensure that **TASK** is selected (this should be selected by default) and click **OK** (Figure 5-49).

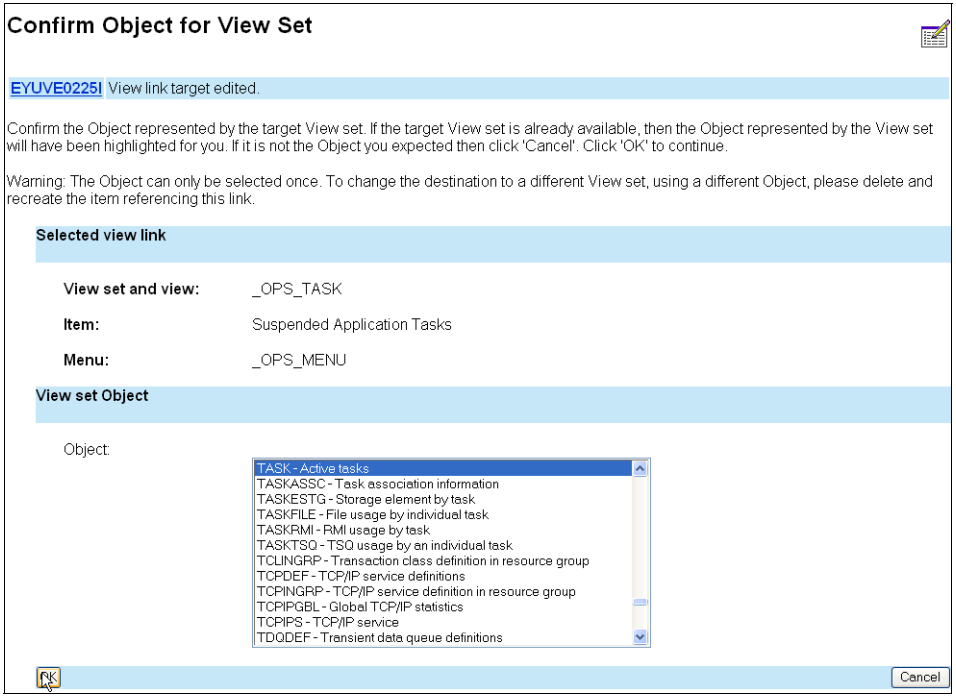


Figure 5-49 Confirm Object for View Set window

10. Choose **Use an existing View**. Select the **SUSPENDED** view and click **OK** to return to the View Link Components window (Figure 5-50).

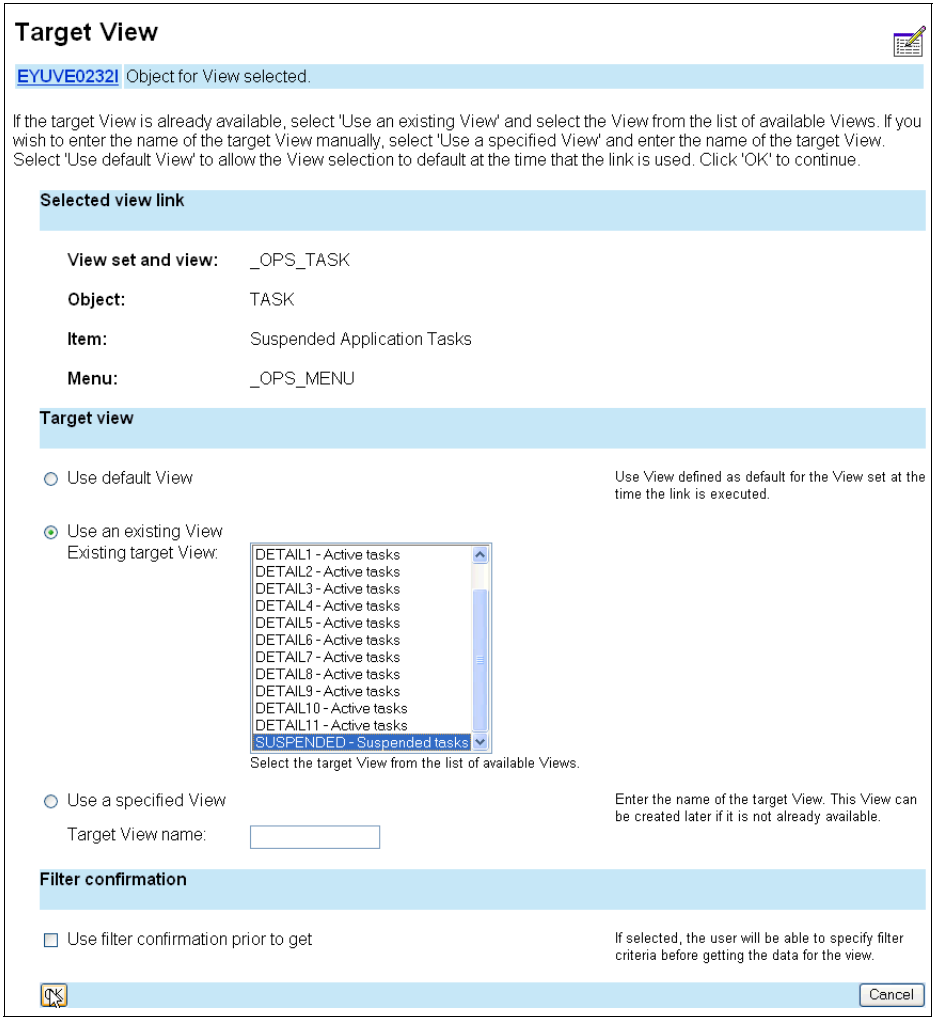


Figure 5-50 Target View window

11. Click the **Filter attributes and parameters** link to specify filter criteria for the link.

12. We wish to filter tasks by transaction ID (<> C*) and dispatch status (=SUSPENDED). Click **Append** to add the first filter (Figure 5-51).

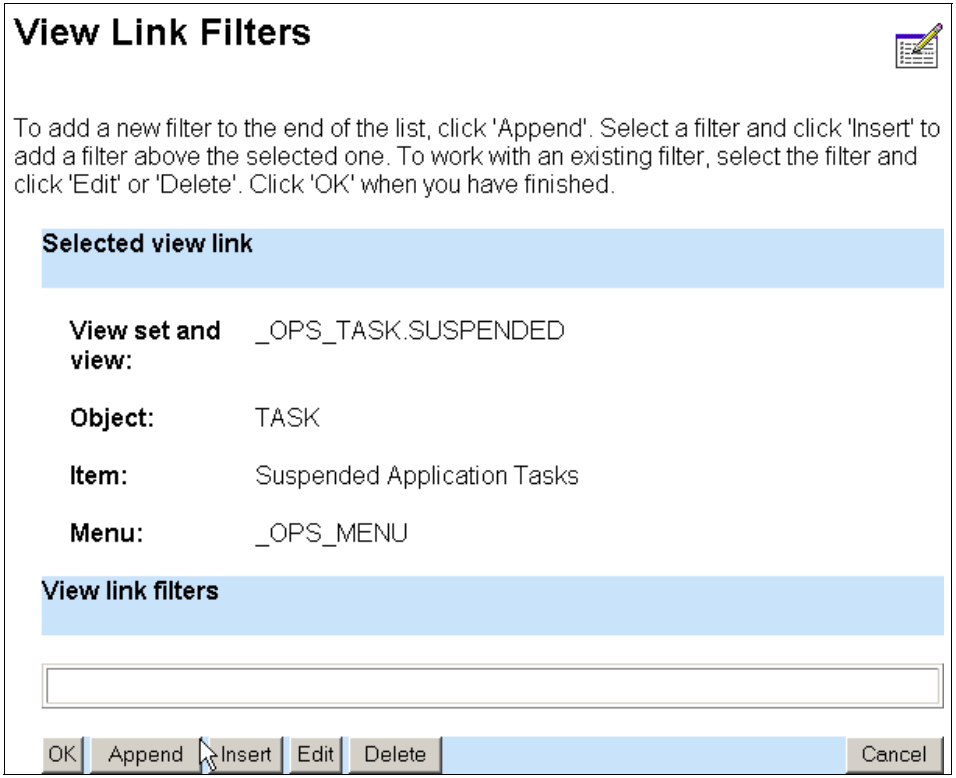


Figure 5-51 View Link Filters window

13. Select **Attribute filter** and click **OK** (Figure 5-52).

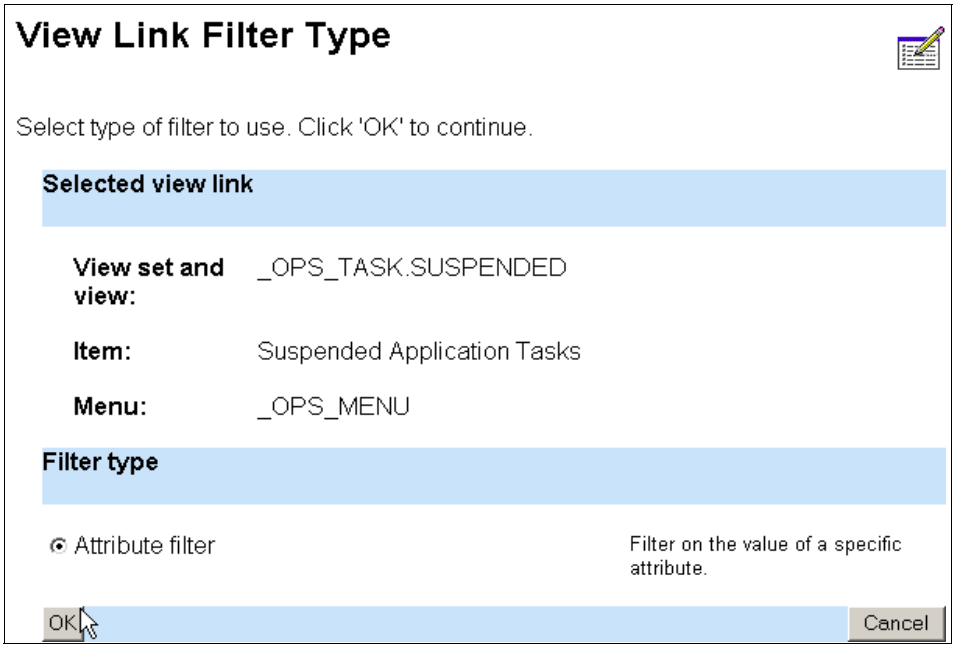


Figure 5-52 View Link Filter Type window

14. Choose **TRANID** in the Filter attribute list box. Click **OK** to proceed.

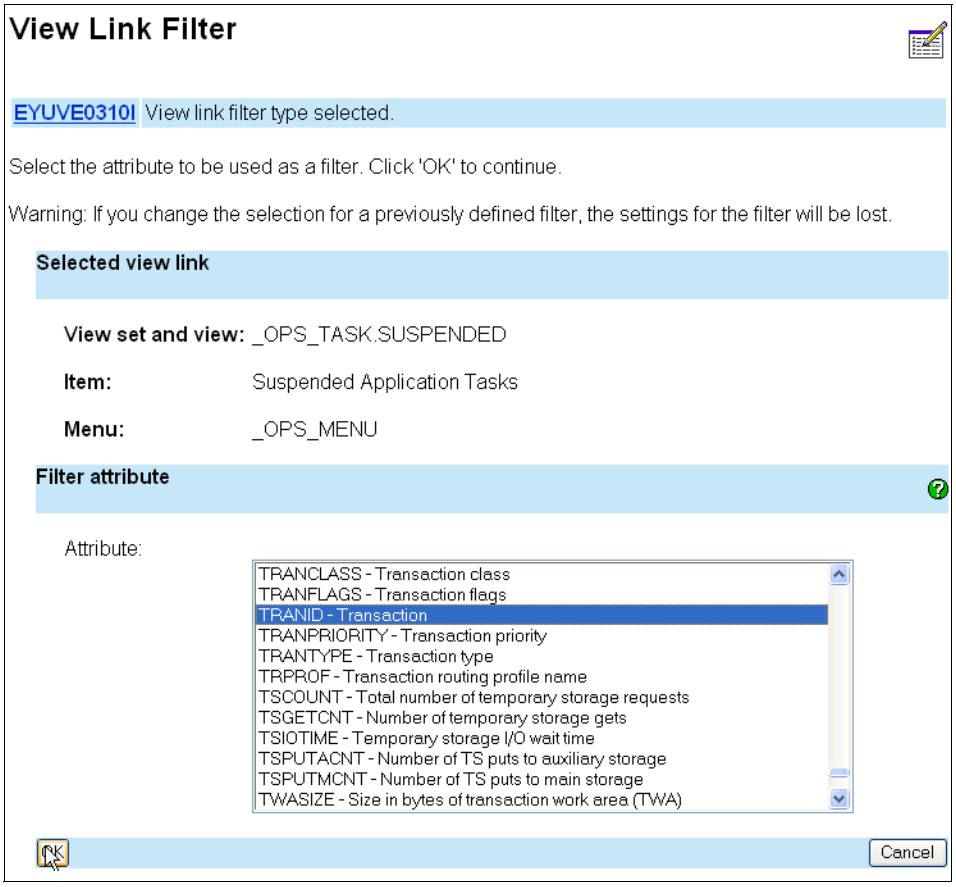


Figure 5-53 View Link Filter window

15. Choose **<>** in the Operator list box. Choose **Use a fixed value**, and type `C*` in the edit box. Click **OK** to return to the View Link Filters window (Figure 5-51 on page 232).

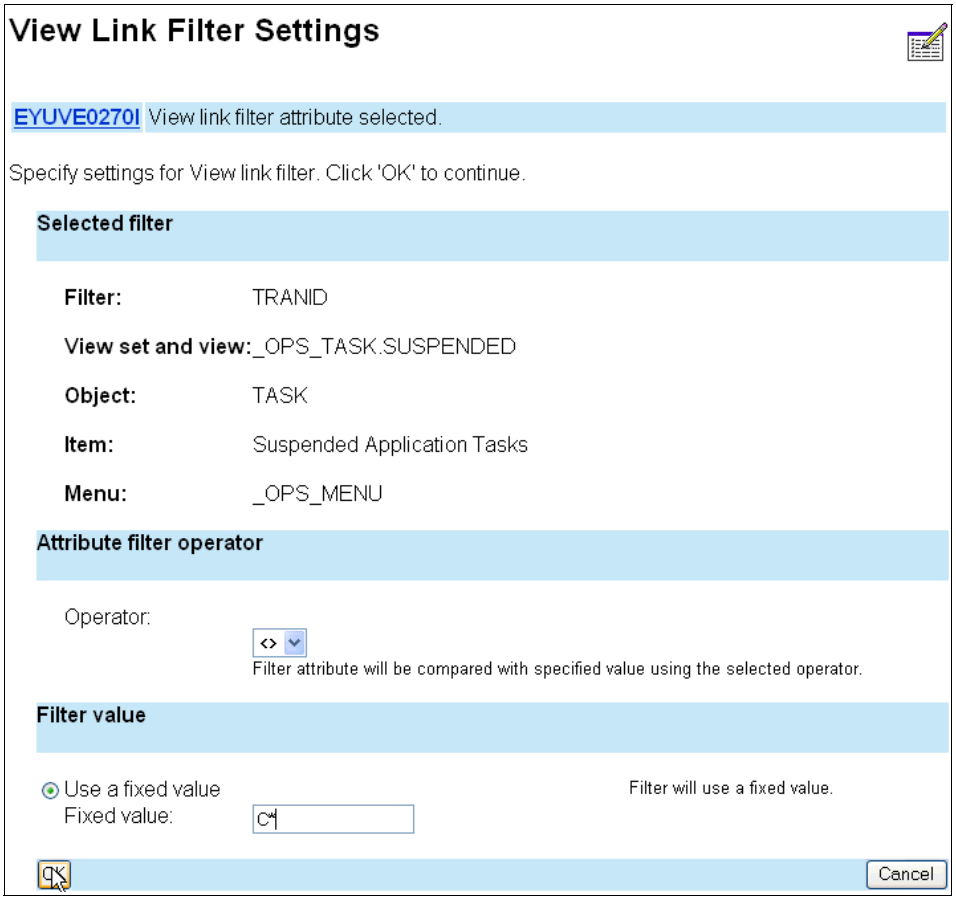


Figure 5-54 View Link Filter Settings window

16. Click **Append** to add the filter on dispatch status. Select **Attribute filter** in the View Link Filter Type window (Figure 5-52 on page 233) and click **OK**.

17.Choose **RUNSTATUS** in the Attribute list box and click **OK** (Figure 5-55).

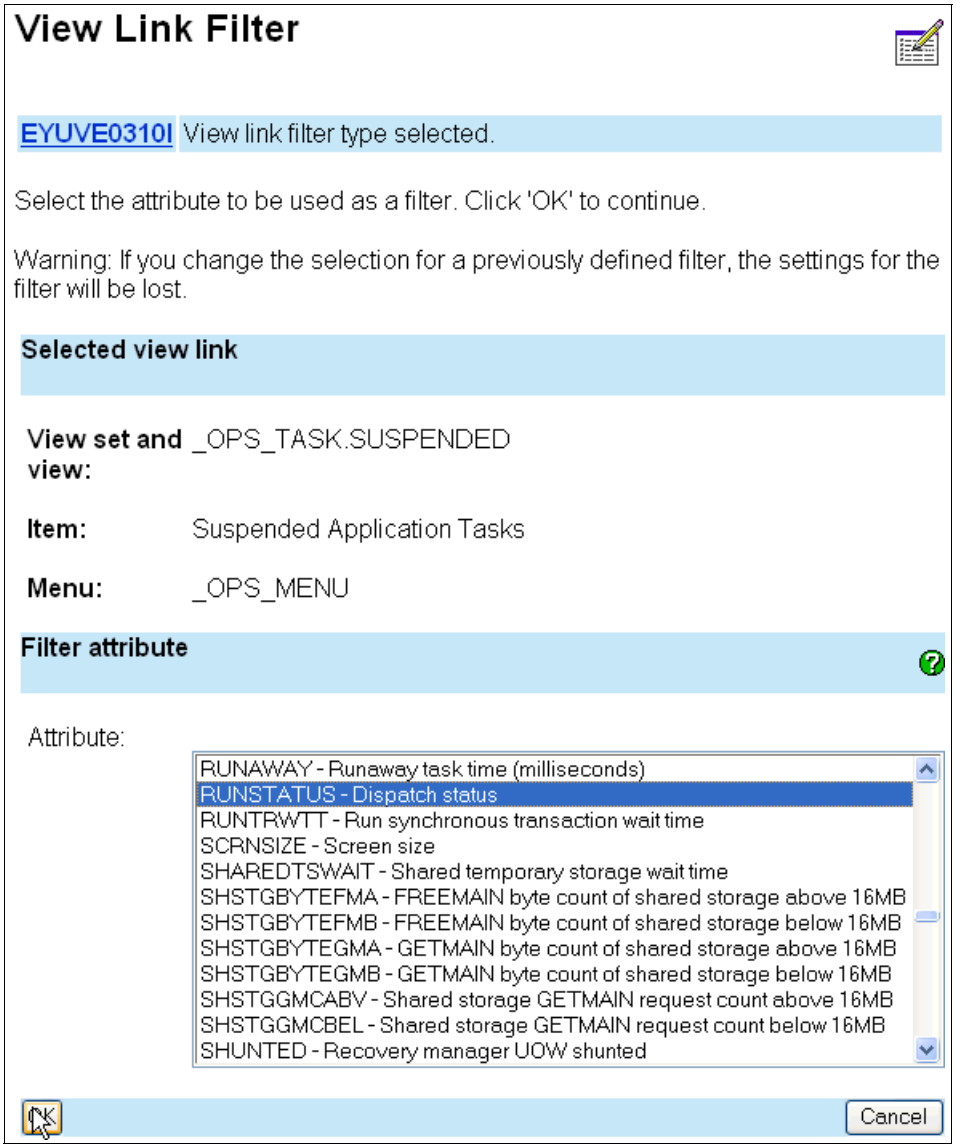


Figure 5-55 View Link Filter window (reprise)

18. Choose = in the Operator list box. Click **Use a fixed CVDA value** and choose **SUSPENDED** in the CVDA list box. Click **OK** to return to the View Link Filters window (Figure 5-56).

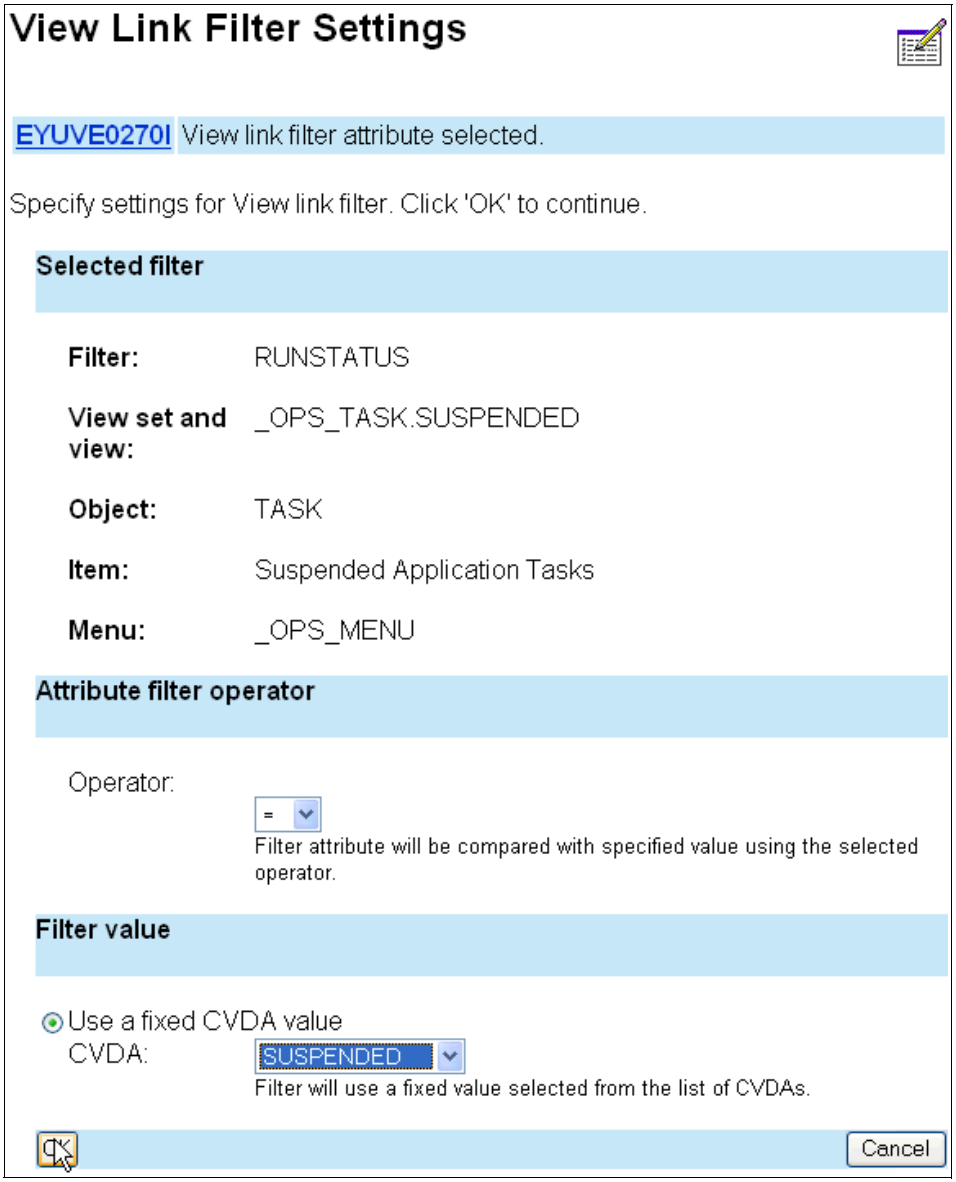


Figure 5-56 View Link Filter Settings window (reprise)

19. The View Link Filters window (Figure 5-51 on page 232) shows that we have defined the desired attribute filters. Click **OK** to complete filter selection. Click **Finish** in each of the stacked windows, and **Save** in the Menu Components window (Figure 5-19 on page 199) to store the updated menu in the repository.

5.3.4 Creating a new view set for a resource table

Creating a new view set for a resource requires careful planning and a consideration of the use that will be made of the new views. The IBM-supplied WUI view sets contain views that display all attributes of each included resource table.

Tabular views contain key attributes and attributes presenting an overview of the status of the resource. A major consideration in designing tabular views is that the selected attributes can be displayed with a minimum of horizontal scrolling.

Detailed views display all attributes of the resource, grouped in a logically consistent fashion. For resources with a large number of attributes (for example, TASK), it is not possible to display all attributes in a single view without requiring excessive vertical scrolling. Attributes for these resources are displayed in several detailed views linked in a hierarchical relationship with links on primary views to lower-level views with more specific information.

When creating a new view in the WUI view editor, the view may be initialized to display all attributes. However, attributes will be arranged in alphabetic sequence by attribute name, so it is usually better to initialize the new view with key attributes and add remaining fields manually.

In this example we create a new view set displaying information from the CICSSTOR resource table. The new view set allows an operator to monitor the status of CICS storage and to react to short-on-storage conditions anywhere in a CICSplex from a Web browser. The new _OPS_CICSSTOR view set will contain one tabular view, one detail view (displaying only a small subset of available attributes), and one confirmation panel. The detailed view is defined using the new two-column view format introduced in CICSPlex SM V3.1 to allow more attributes to be displayed without requiring vertical scrolling. Note that a complete CICSSTOR view set would contain more and larger detailed views to display all attributes in the CICSSTOR resource table, but that is not necessary for this example.

In building this view set we create several hyperlinks: to another view in the _OPS_CICSSTOR view set and to a view in another view set. We allow the DSA and EDSA limits to be updated directly from the detailed view, and through a

confirmation panel linked to the tabular view. We also define a warning light to provide a visual indication of short-on-storage conditions.

Creating the view set

To create the view set:

1. Open a View Editor window by clicking the **View editor** link in the navigation frame of a WUI window. Click the **View sets** link to enter the view set editor, then click the **Create** link.
2. Type the name of the new view set, `_OPS_CICSSTOR`, in the edit box. Choose **CICSSTOR** from the Object list box. Click **OK** to create the view set (Figure 5-57).

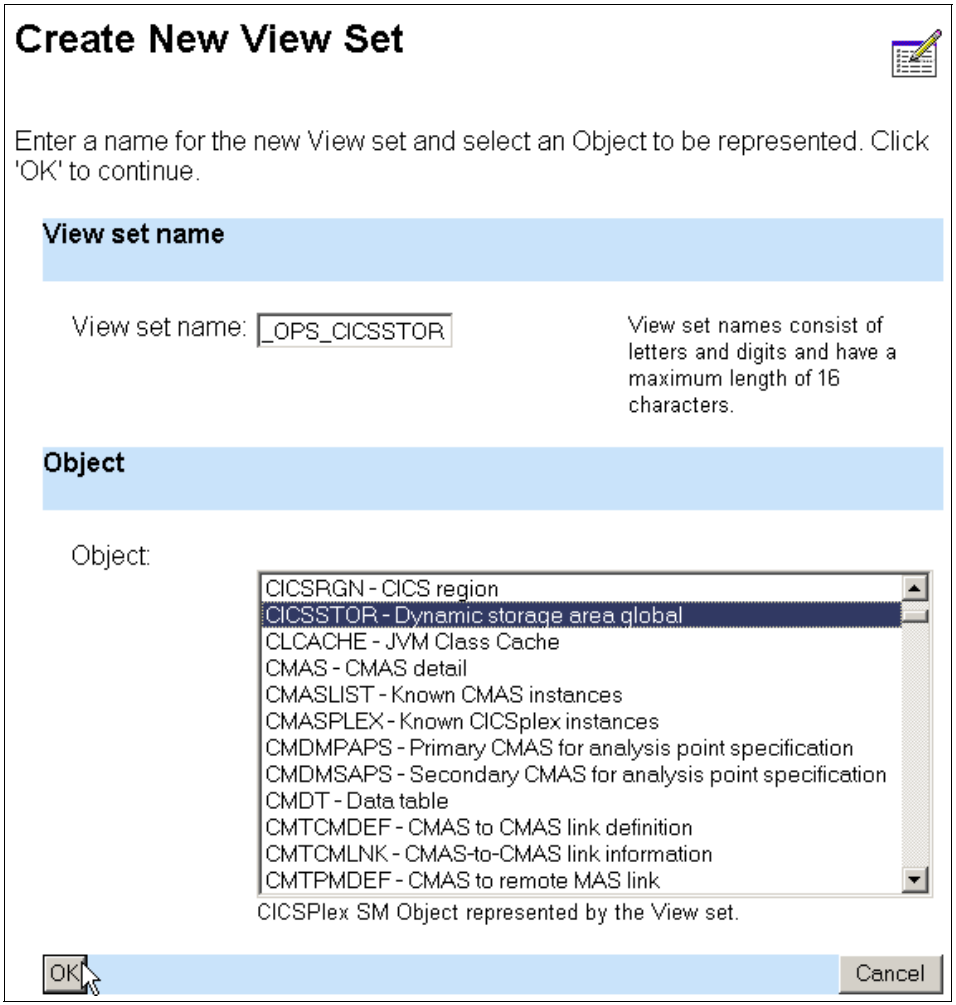


Figure 5-57 Create New View Set window

Creating the tabular view

The new tabular view displays the region name, the current size of the DSA and EDSA, the peak DSA and EDSA sizes, the short-on-storage (SOS) status, the storage protection status, and the transaction isolation status. SOS status is indicated with a warning light that turns yellow if short on storage below or above the 16 MB line, and red if short on storage both below and above the line.

1. Click **Add** to add the first view to the new view set (Figure 5-58).

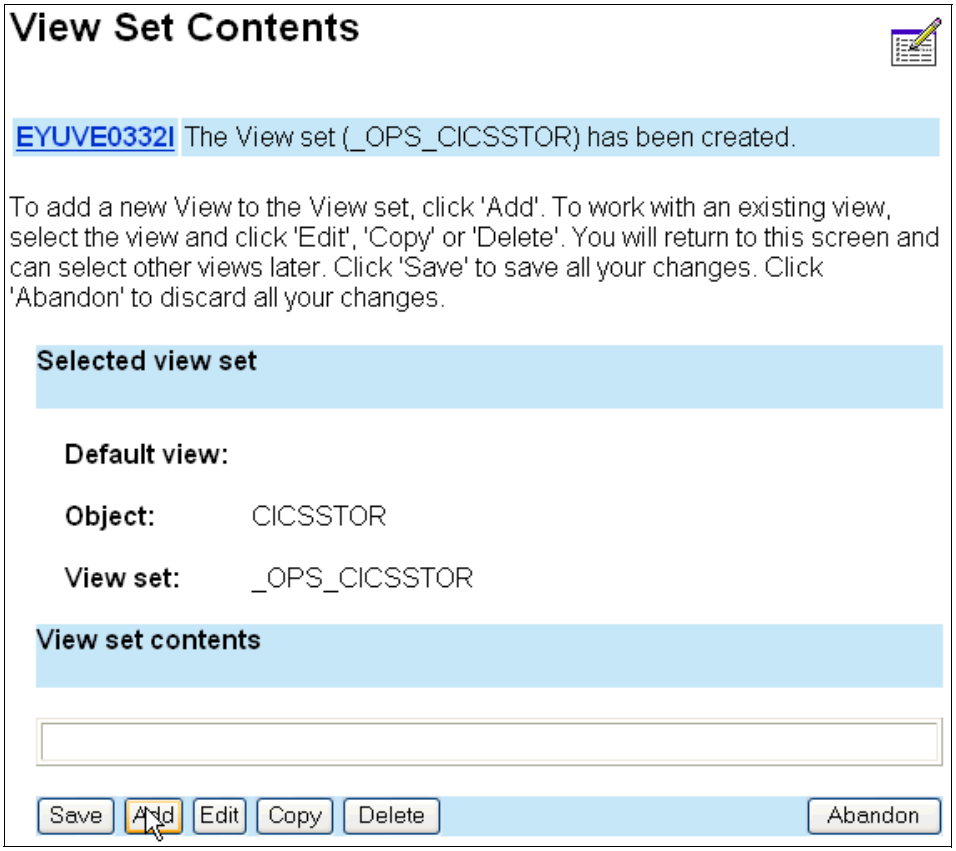


Figure 5-58 View Set Contents

2. Type the name of the new view, `Tabular`, in the edit box. Select **Tabular view** for view type and **Key attributes** for pre-fill option. This creates a new tabular view, named tabular, and initializes the view with the key attributes for the resource type. Click **OK** to proceed (Figure 5-59).

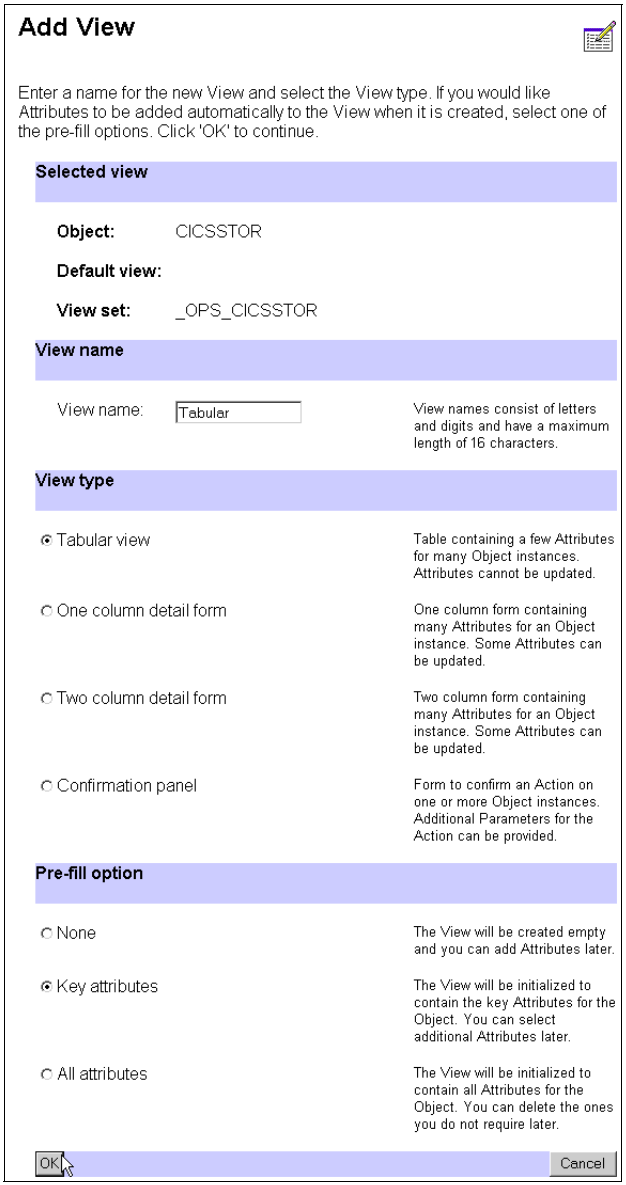


Figure 5-59 Add View window

3. Click the **Table contents** link to add columns to the view (Figure 5-60).

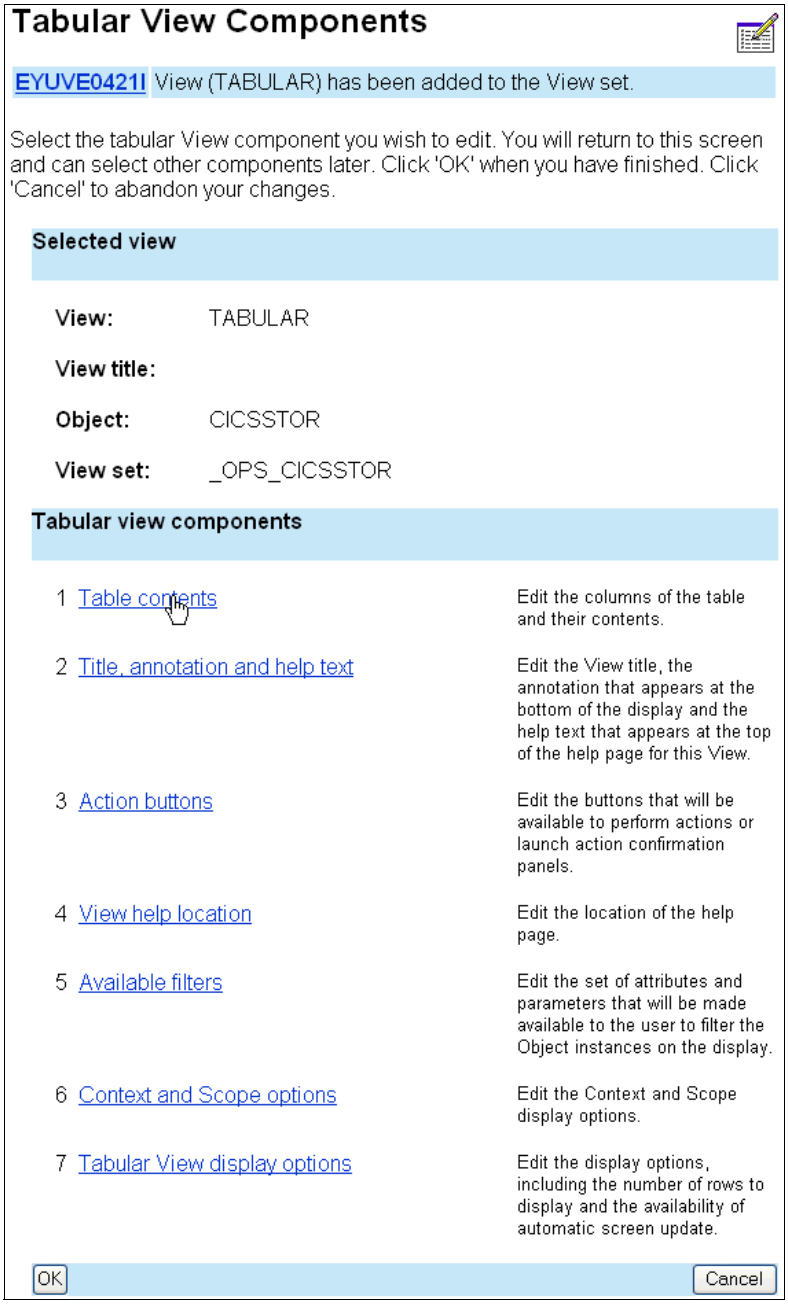


Figure 5-60 Tabular View Components window (reprise)

4. Note that the key attribute for this resource, CICS system name, was pre-filled when the new view was created. We add additional attributes by appending them to the list. Click **Append** (Figure 5-61).

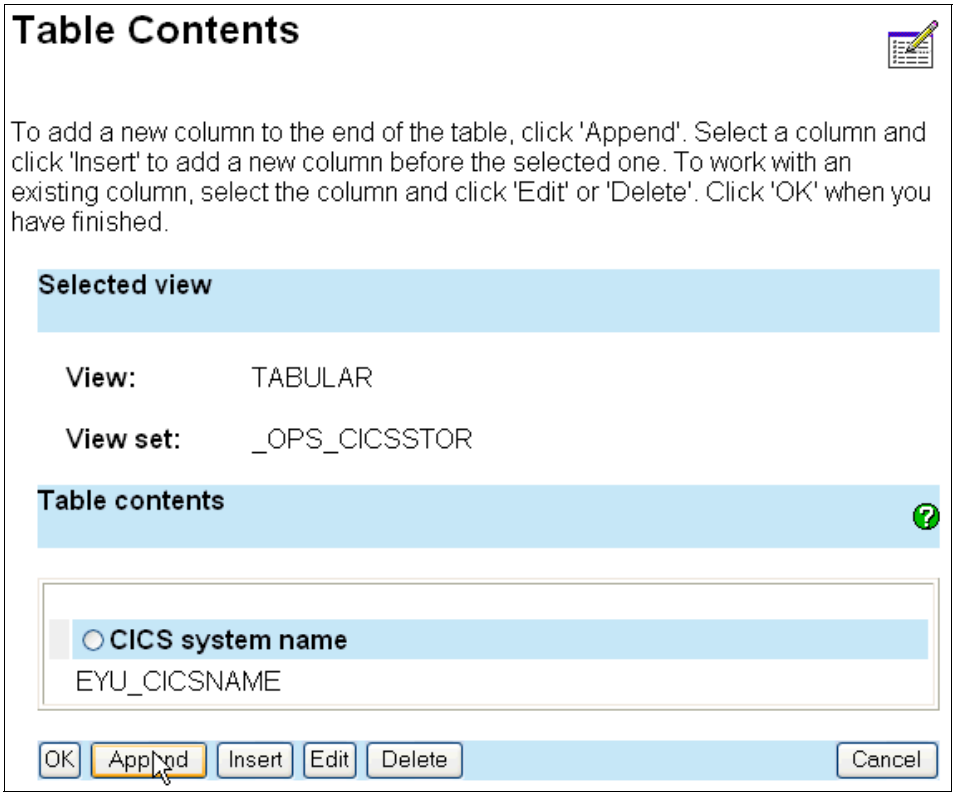


Figure 5-61 Table Contents window

5. Several formats are available for CICS storage values: Normal, Thousands separator, Storage (xxxxKB or yyyMB), Storage with 1 decimal place, and Storage with 3 decimal places. Choose the desired attribute (**SMSDSATOTAL**) and formatting option (**Storage**) from the Attribute list box (Figure 5-62). Click **OK**.

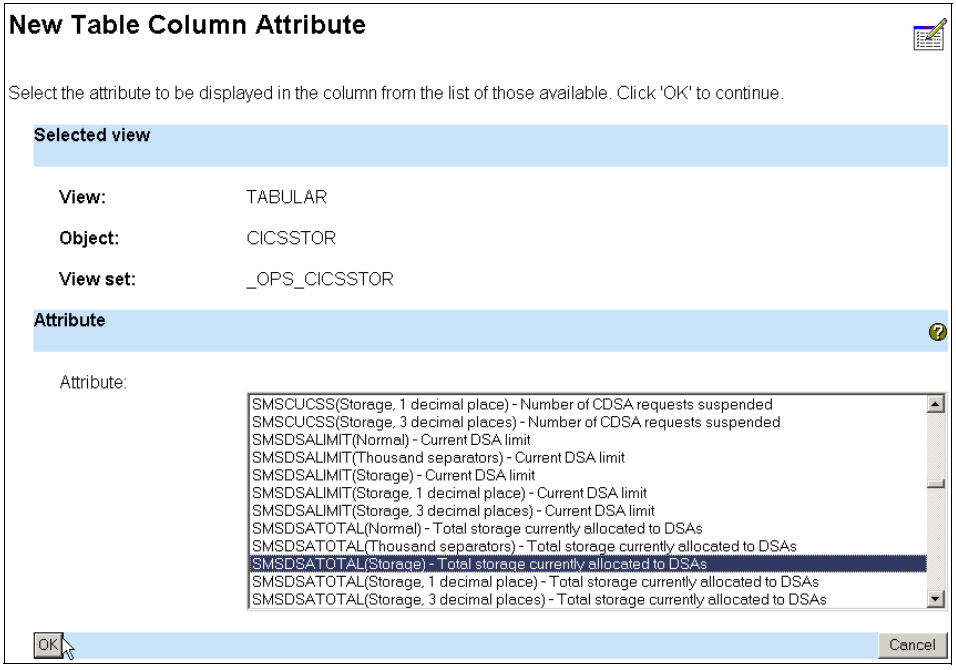


Figure 5-62 New Table Column Attribute window

6. Click the **Column Title and options** link (Figure 5-63). We create view links (hyperlinks) and modify presentation options for selected display fields later.

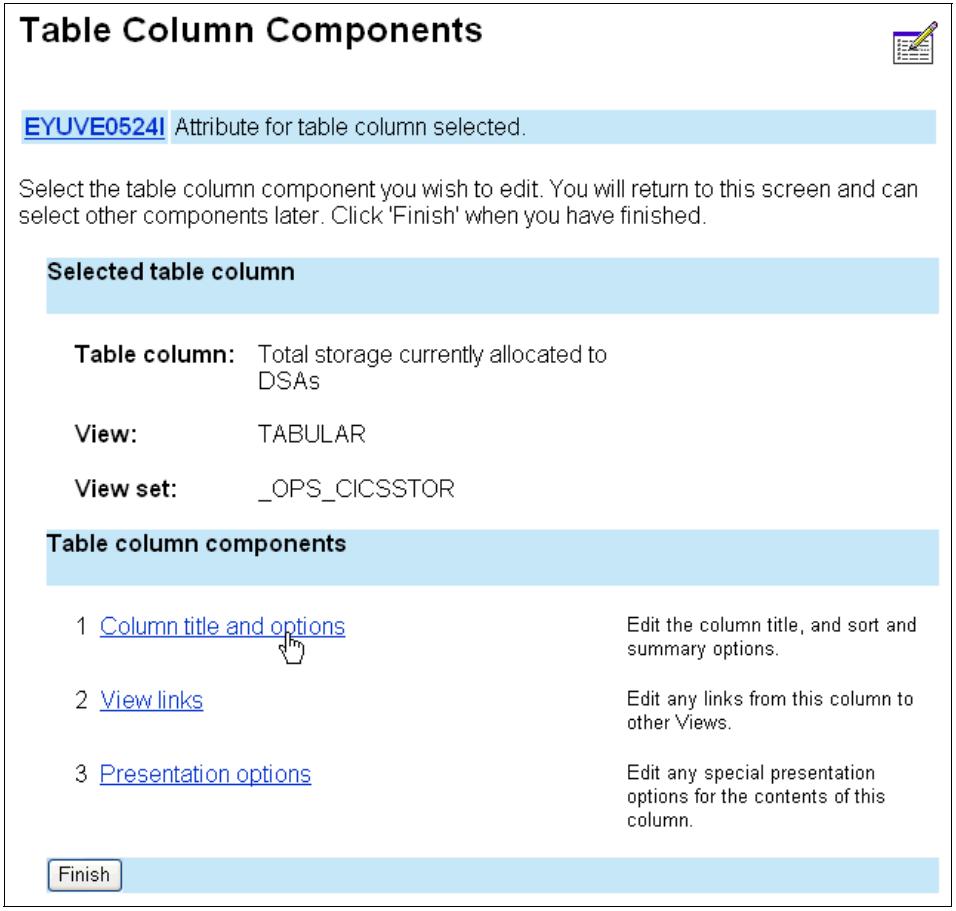


Figure 5-63 Table Column Components window

7. The default column title is pre-filled in the edit box. It can be modified if desired. Click the check boxes for **Sort buttons available** and **Summary button available** to allow the view to be sorted or summarized on this column (Figure 5-64 on page 247). The default summary option is pre-set and can be changed if desired. Click **OK** when finished.

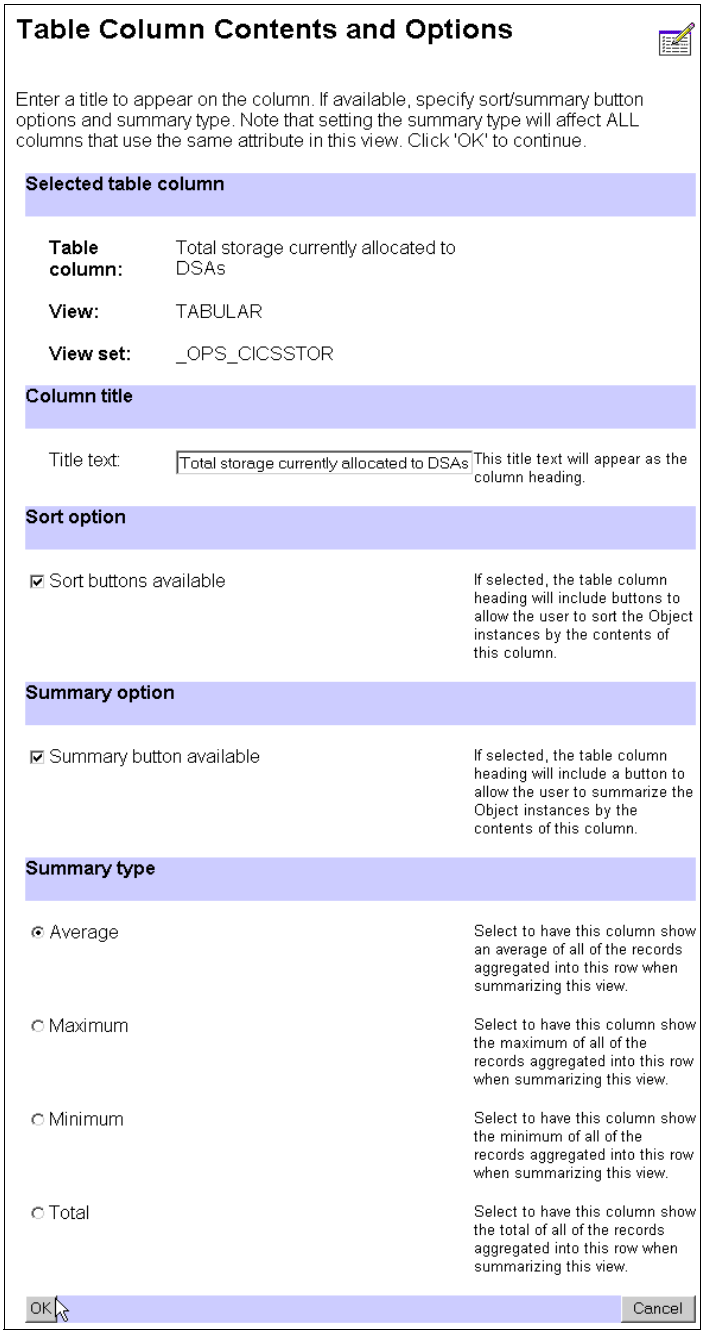


Figure 5-64 Table Column Contents and Options window

8. Repeat steps 4 on page 244 through 7 on page 246 for each of the remaining attributes to be added to the tabular view.
   - SMSEDSATOTAL (Storage)
   - SMSHWMDSATOT (Storage)
   - SMSHWMEDSATO (Storage)
   - SMSSOSSTATUS
   - SMSSTGPROT
   - SMSTRANISO

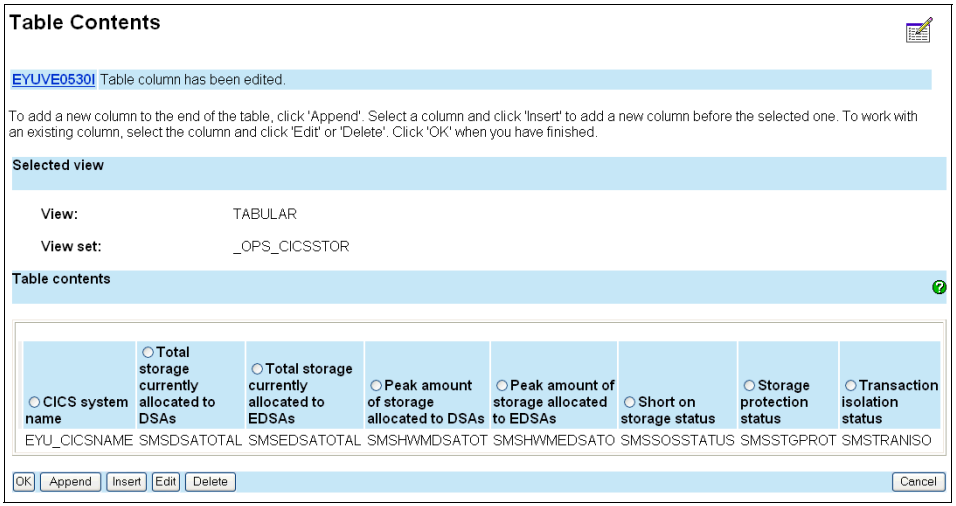


Figure 5-65 Table Contents window (reprise)

We have added all the desired attributes to the tabular view.

Now we want to customize the tabular display by defining view links from the CICS system name column to the DETAILED view in this view set, and from “Total storage currently allocated to DSAs” and “Total storage currently allocated to EDSAs” to the TABULAR view of view set EYUSTARTCICSDSA to examine storage allocation in individual DSAs. We also want to add a warning light to the “Short on storage status” column to provide a visual indication of SOS conditions.

Define a view link to another view in the same view set

To do this:

1. Select **CICS system name (EYU_CICSNAME)** and click **Edit**.
2. In the Table Column Components window (Figure 5-63 on page 246) click the link to **View links**.

3. Click **Append** to add a link to this attribute (Figure 5-66).

Figure 5-66 View Links window

4. This view link connects to the DETAILED view. This view is created later. Select **Local view** and click **OK** to continue (Figure 5-67).

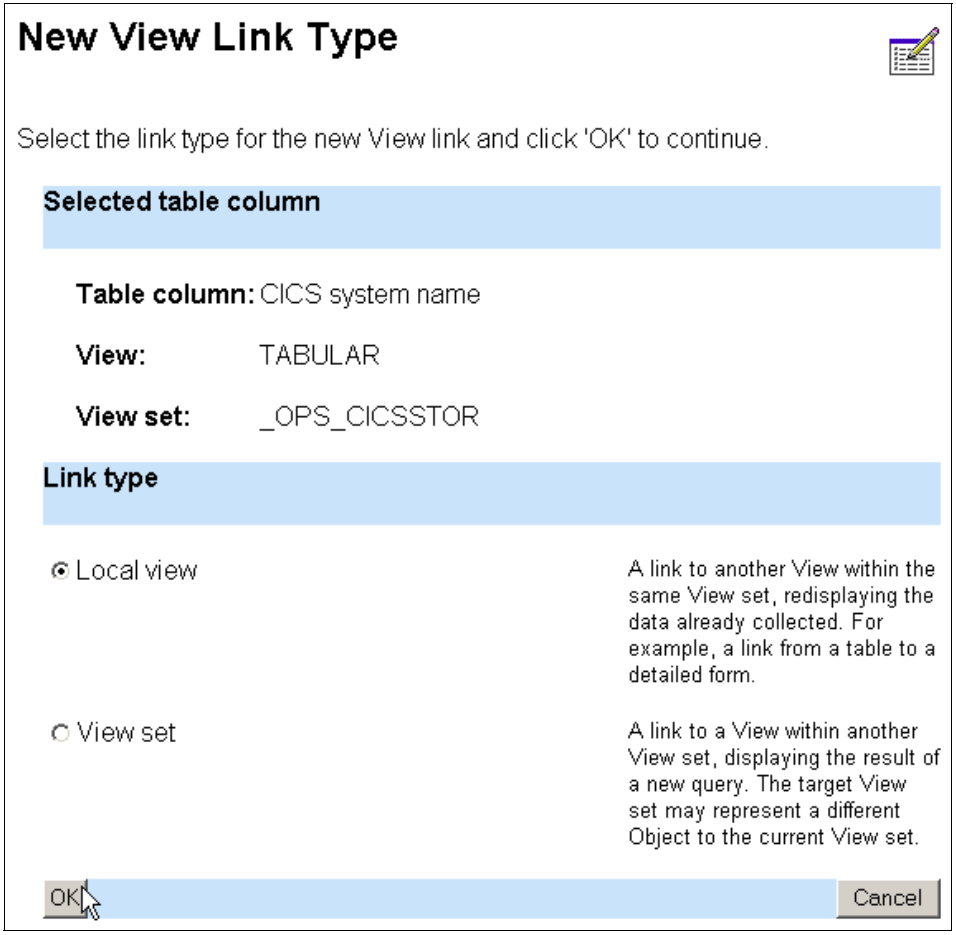


Figure 5-67 New View Link Type window

5. This view link is always valid, so we select **View link is always valid** and click **OK** (Figure 5-68).

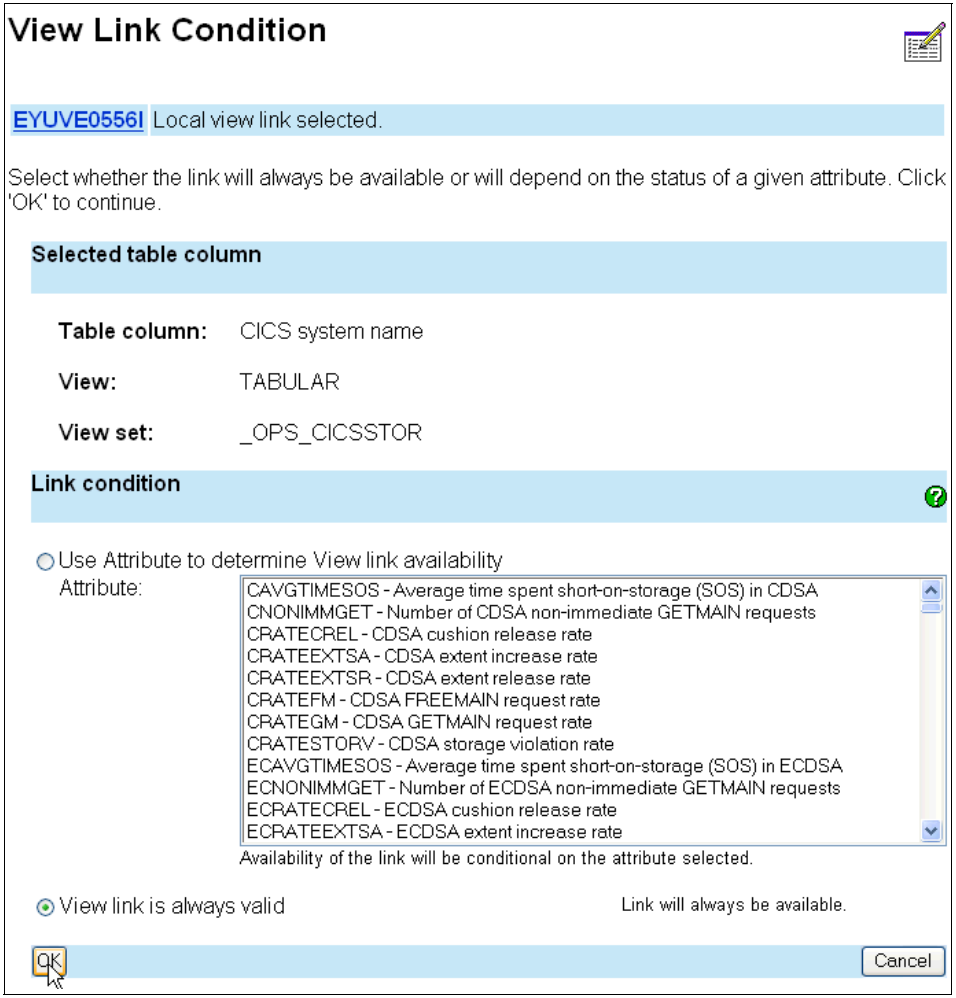


Figure 5-68 View Link Condition window

6. We now need to identify the target of the new view link. Click the **Target** link in the outer View Link Components window (Figure 5-69).

> **Note:** There are two windows titled View Link Components. The outer View Link Components window is displayed below. The inner window offers additional components for a hyperlink to a view in a different view set. It is reached by clicking the **Target** link in the outer window.

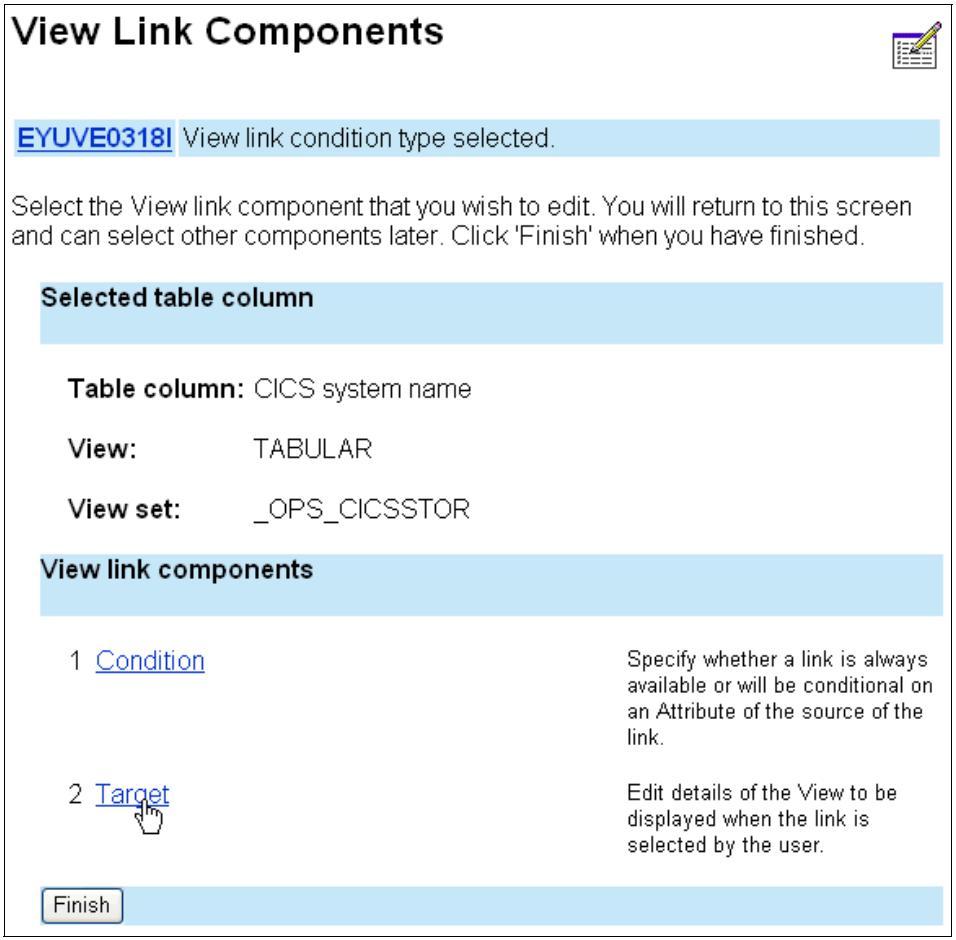


Figure 5-69 Outer View Link Components window

7. Since we have not yet defined any other views in this view set, we are not presented with a list box in which we can choose a view. However, we do know the name of the planned detailed view, so select **Use a specific view** and type the name `DETAILED` in the edit box (Figure 5-70). Click **OK**, then click **Finish**.

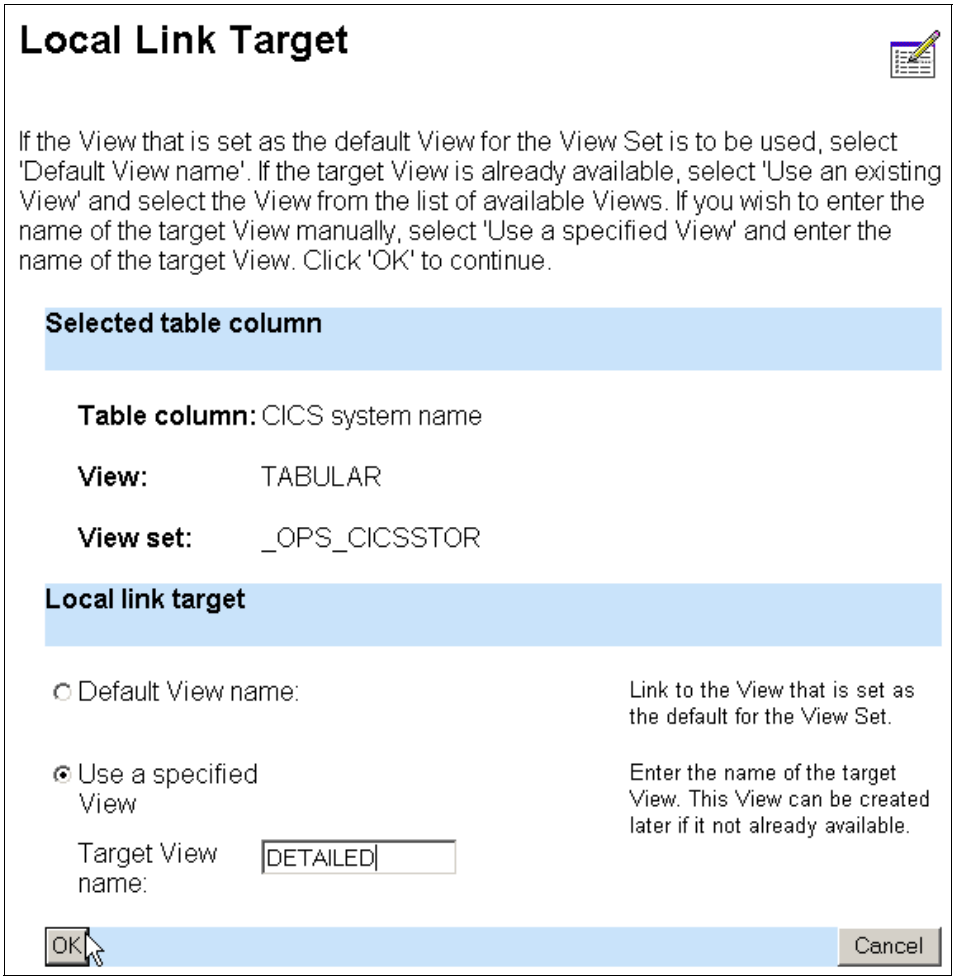


Figure 5-70 Local Link Target window

8. We defined a hyperlink from the CICS system name attribute to the DETAILED view. This allows us to examine more closely the storage allocation in a selected region, and to adjust the DSA and EDSA limits. Click **OK** (Figure 5-71), then **Finish** to return to the Table Contents window (Figure 5-65 on page 248).

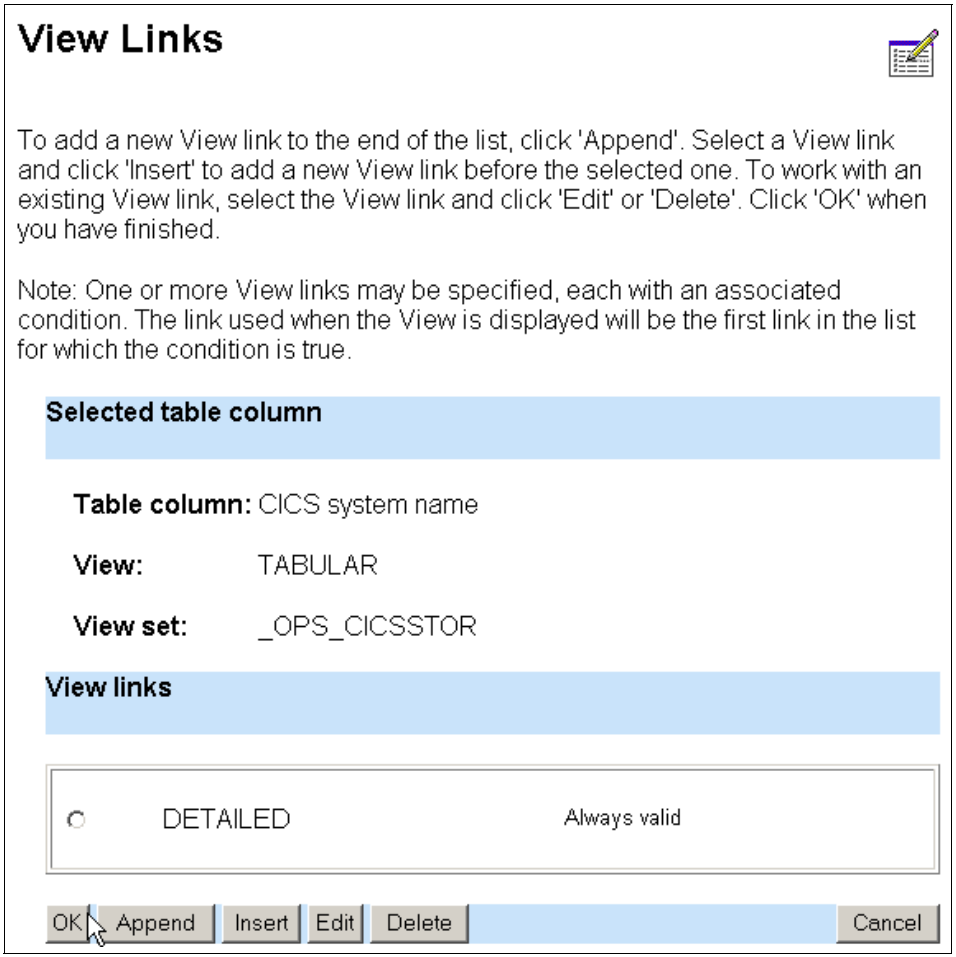


Figure 5-71 View Links window (reprise)

Define a view link to a view in a different view set

To do this:

1. In the Table Contents window (Figure 5-65 on page 248) choose **Total storage currently allocated to DSAs (SMSDSATOTAL)** and click **Edit**.

2. In the Table Column Components window (Figure 5-63 on page 246) click the link to **View links**.
3. Click **Append** in the View Links window (Figure 5-66 on page 249) to begin defining the new link.
4. This link takes us to a view in a different view set. Select **View set** and click **OK** (Figure 5-72).

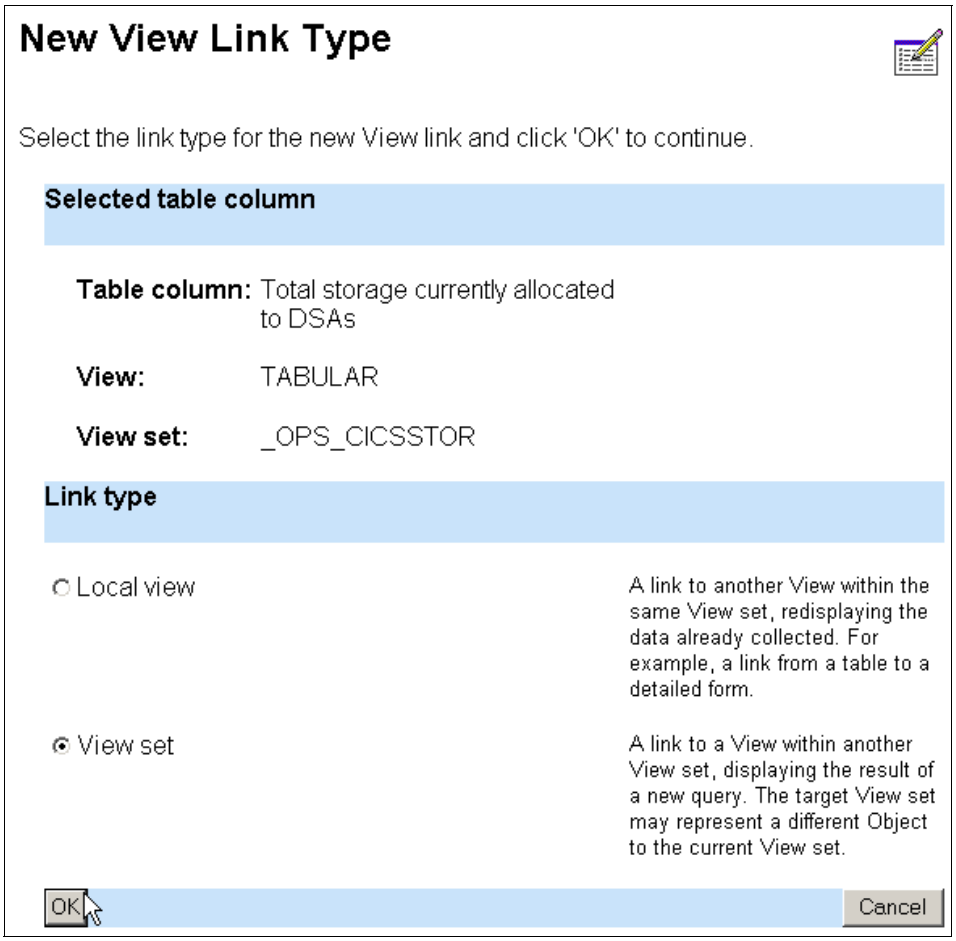


Figure 5-72 New View Link Type window (reprise)

5. This link is unconditional, so select **View link is always valid** in the View Link Condition window and click **OK** (Figure 5-73).

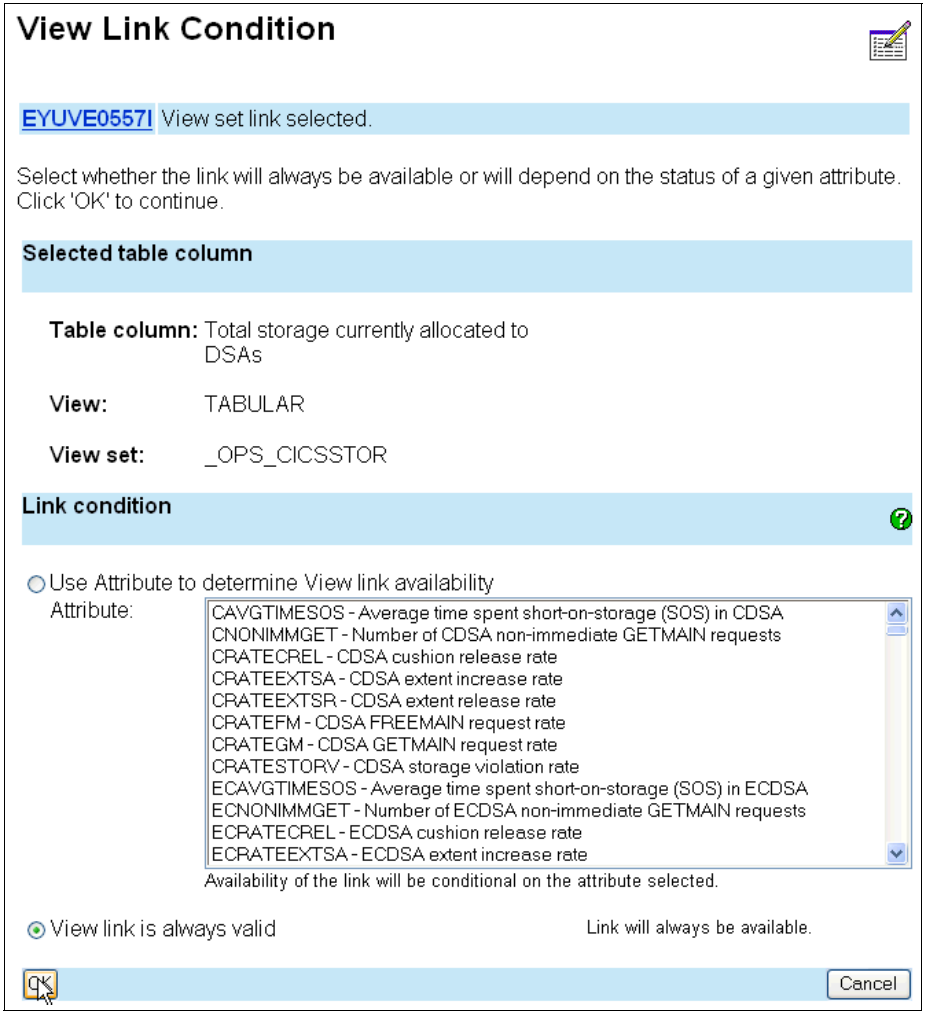


Figure 5-73 View Link Condition window (reprise)

6. In the outer View Link Components window (Figure 5-69 on page 252), click the **Target** link to identify the target view set and view.

7. Choose the target view set **EYUSTARTCICSDSA** in the list box and click **OK** (Figure 5-74).

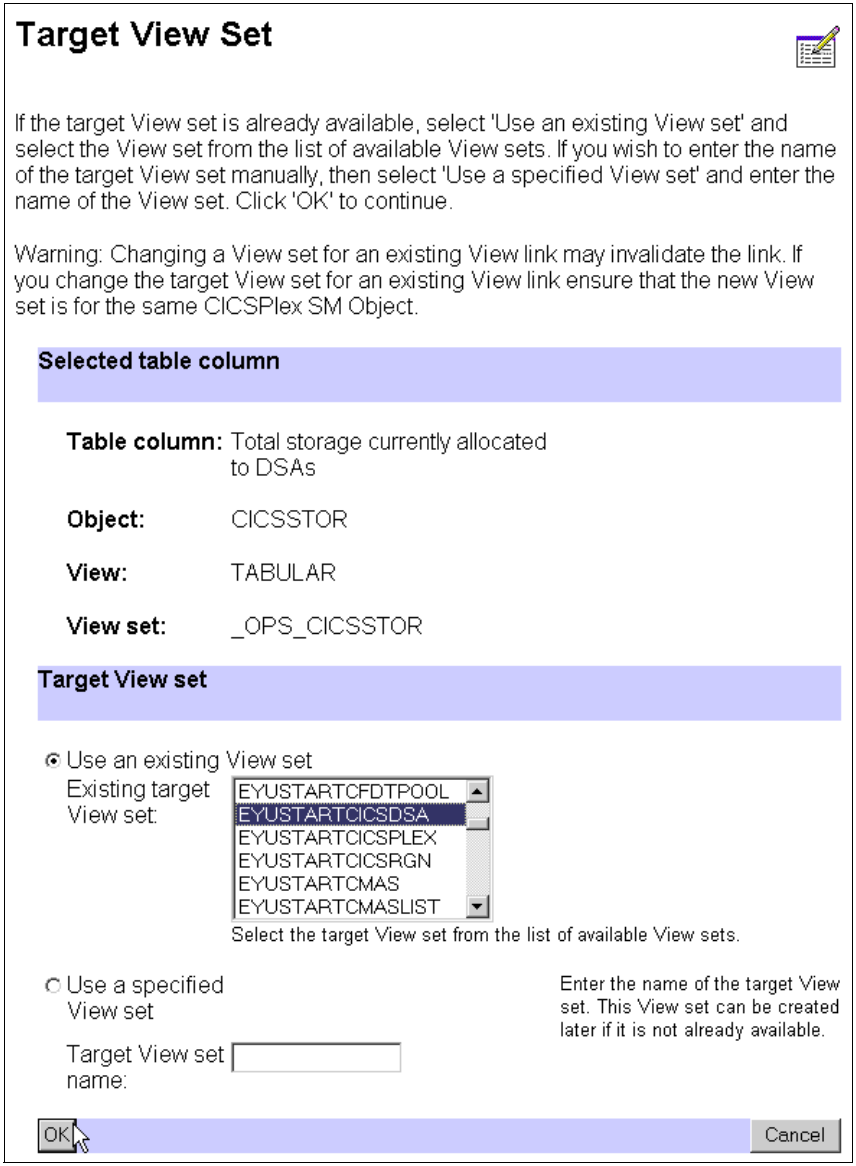


Figure 5-74 Target View Set window

8. Confirm that CICSDSA is highlighted and click **OK** (Figure 5-75).

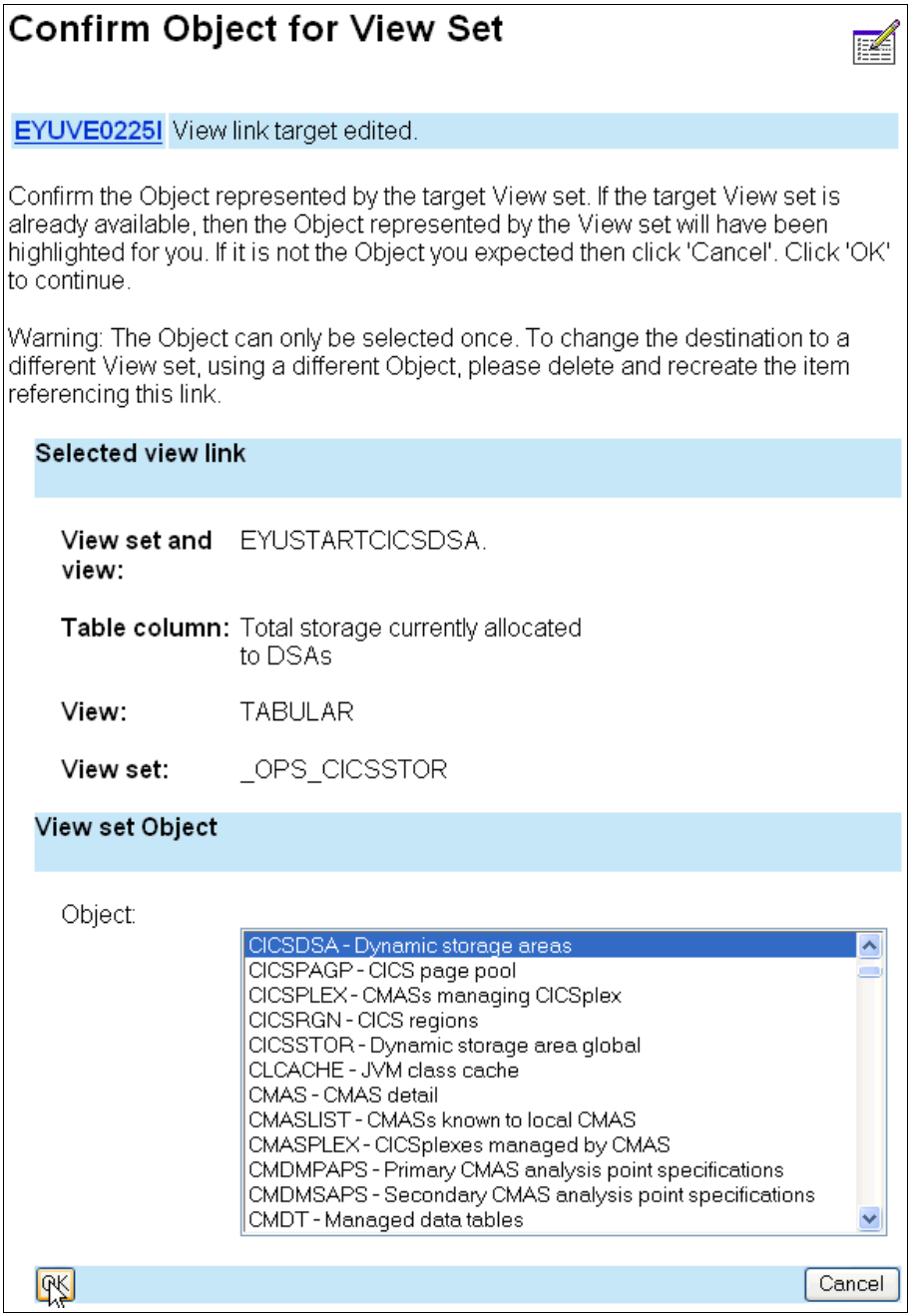


Figure 5-75 Confirm Object For View Set window

9. Select **Use existing view**, choose **TABULAR** in the list box, and click **OK** (Figure 5-76).

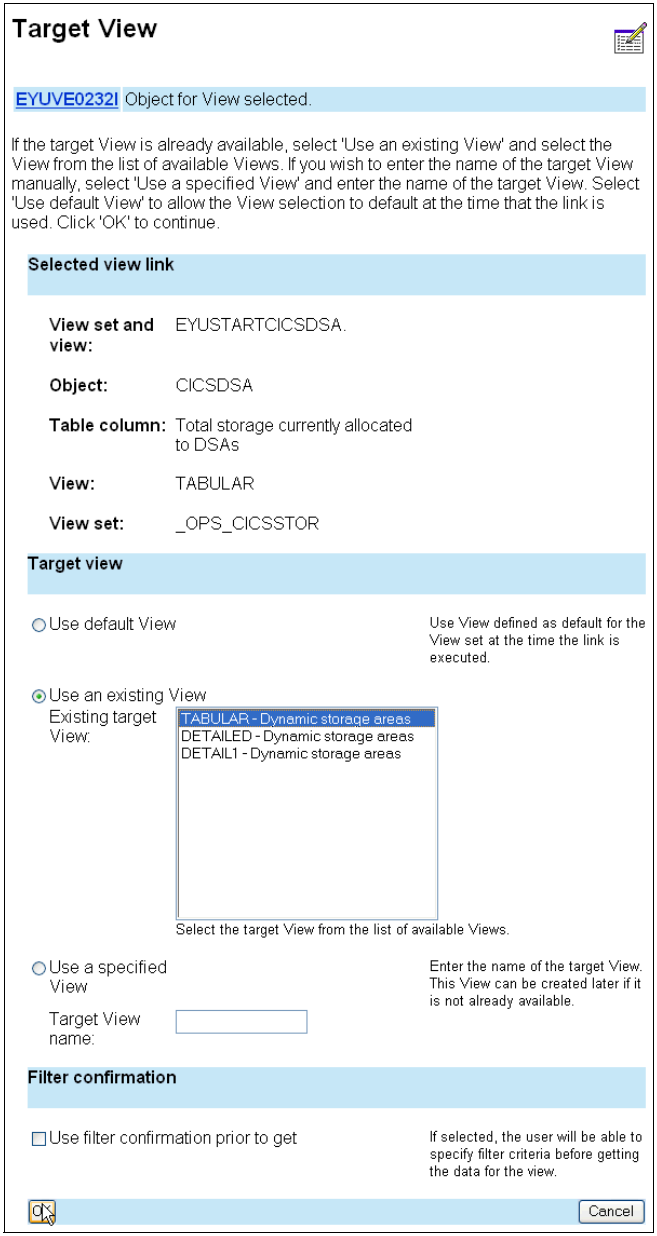


Figure 5-76 Target View window

10. Click the **Context and Scope settings** link in the inner View Link Components window (Figure 5-77).

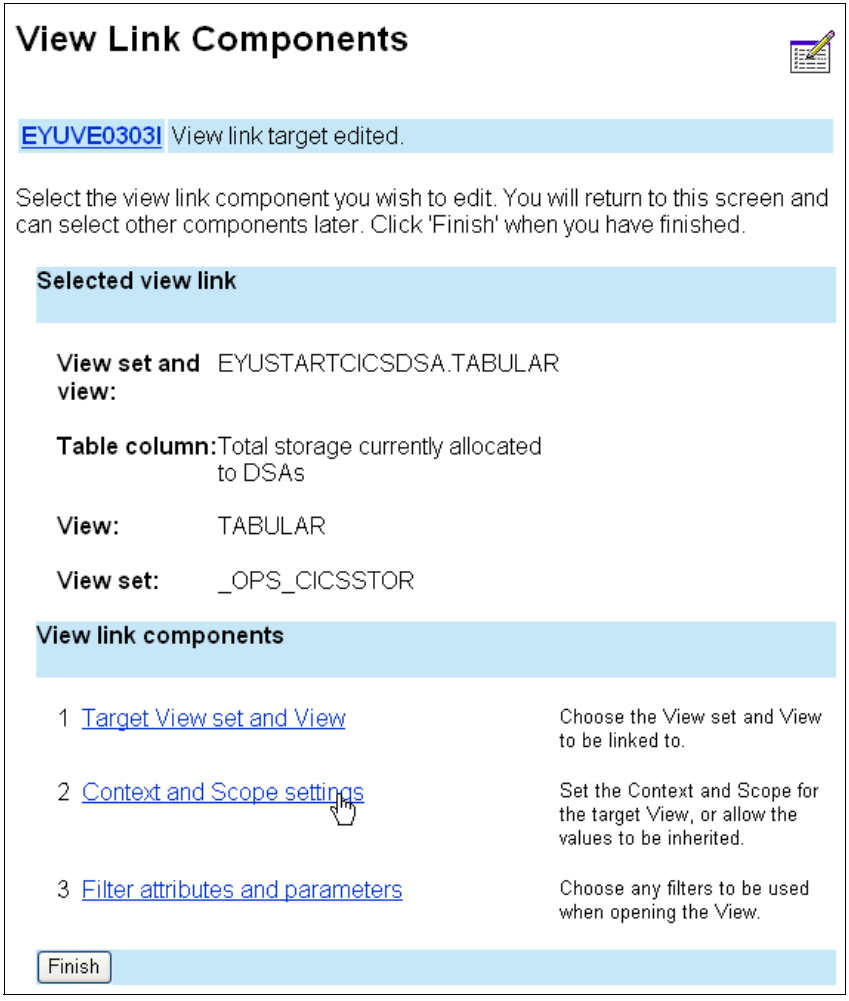


Figure 5-77 Inner View Link Components window

11. Select **Inherit from current Menu or View** for context and CMAS context. The scope is set from the EYU_CICSNAME attribute to limit the data displayed in the target view to the selected system. For scope, select **Use an attribute value** and choose **EYU_CICSNAME(Normal)** from the Attributes list box (Figure 5-78). Click **OK**.

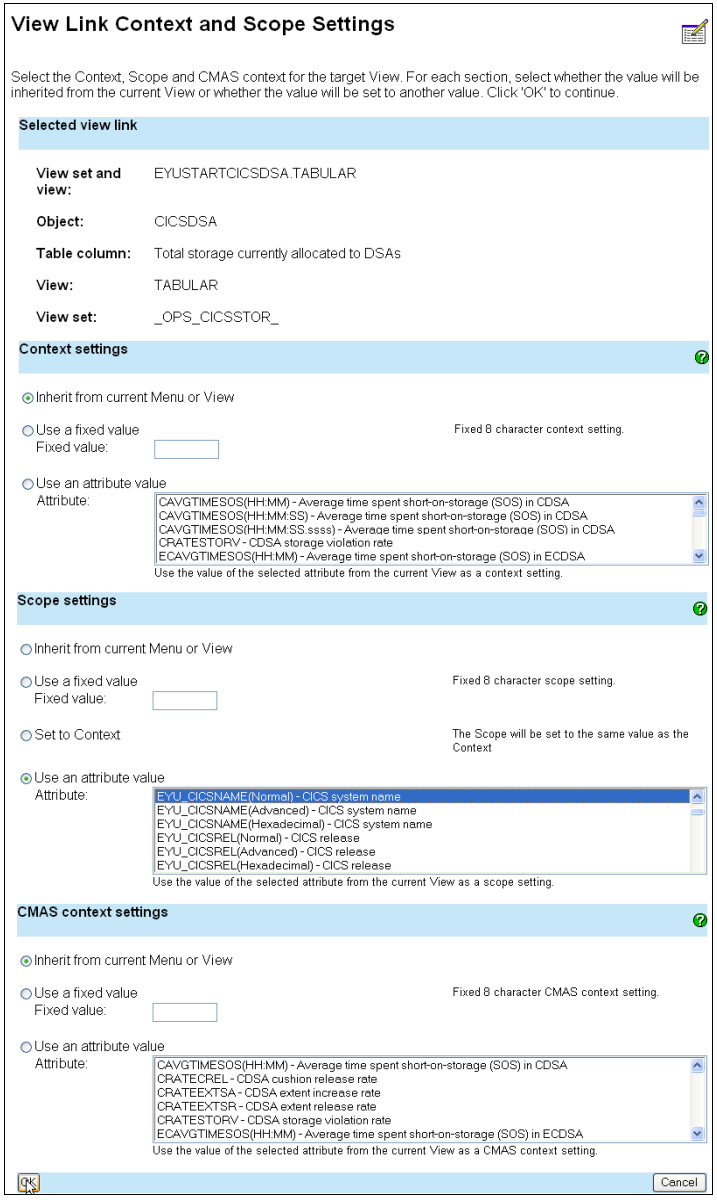


Figure 5-78 View Link Context and Scope Settings window

12. In the inner View Link Components window (Figure 5-77 on page 260) click the **Filter attributes and parameters** link to define a filter to limit the CICSDSA resources displayed.
13. Click **Append** to create a new filter (Figure 5-79). This filter is applied when data is collected for the link target view, so we define the filter for the CICSDSA resource table.

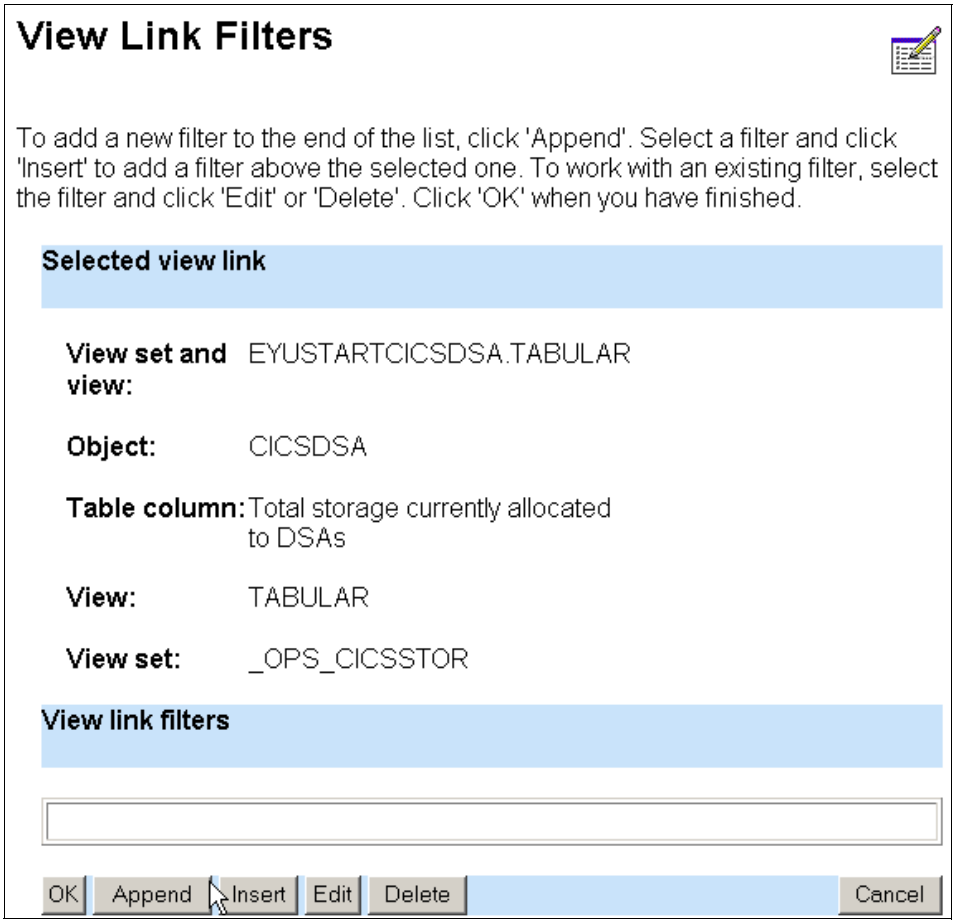


Figure 5-79 View Link Filters window

14. On the View Link Filter Type screen ensure that **Attribute filter** is chosen and click **OK**.

15. We must filter the data on the view to limit our display to DSAs that contribute to the selected total. This can be done by using generic versions of the DSA names in the filter. Choose **NAME** from the Attribute list box and click **OK** (Figure 5-80).

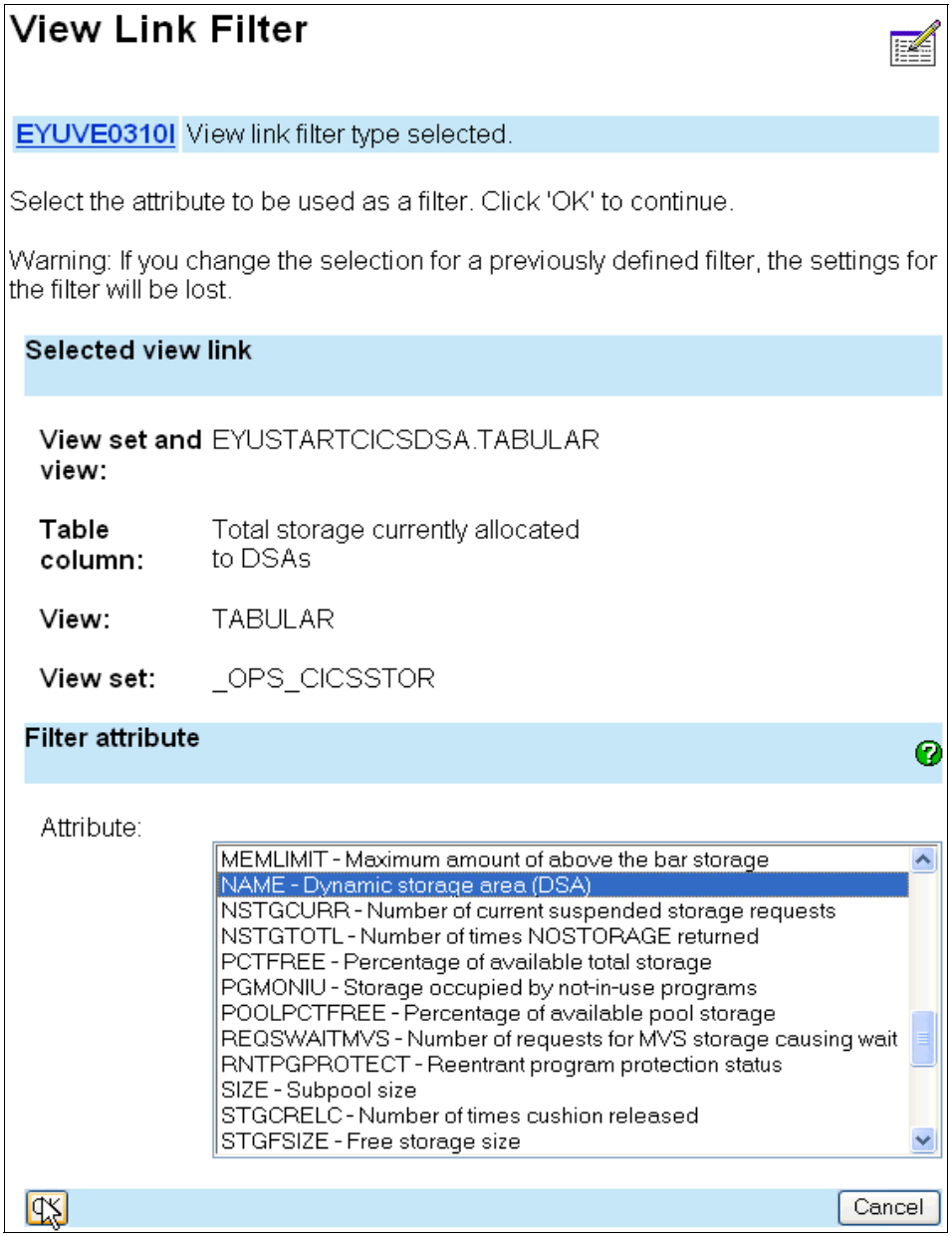


Figure 5-80 View Link Filter window

16. Since this link is defined on Total storage currently allocated to DSAs, we want to display CICS DSAs residing below the 16 MB line. These DSAs are named CDSA, RDSA, SDSA, and UDSA. To restrict the results displayed to this set of DSAs, we use wild cards with the filter. Choose **=** from the Operator list box. Select **Use a fixed value** and type **+DSA** in the **Fixed value** text box (Figure 5-81). The plus sign (+) is a wildcard for an individual character. Click **OK**.

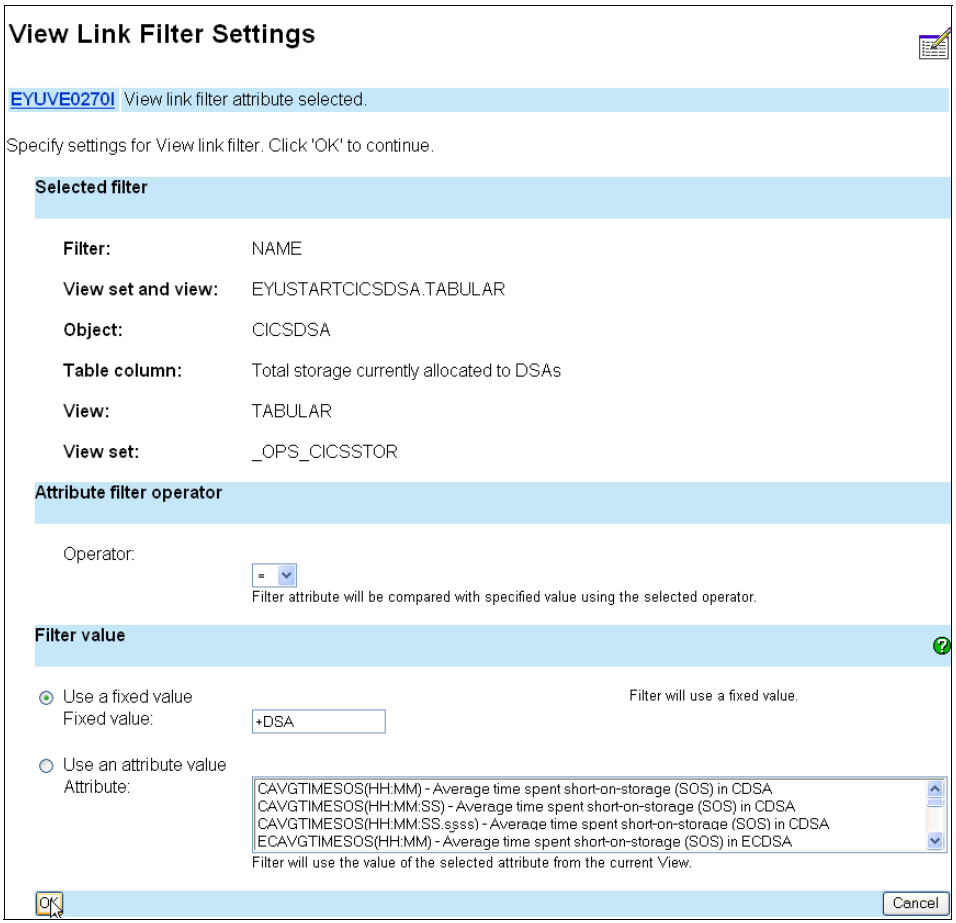


Figure 5-81 View Link Filter Settings window

17. Click the **OK** and **Finish** buttons in each stacked window to return to the View Links window.

18. Click **OK** in the View Links window (Figure 5-82) and **Finish** in the Table Column Components window (Figure 5-63 on page 246).

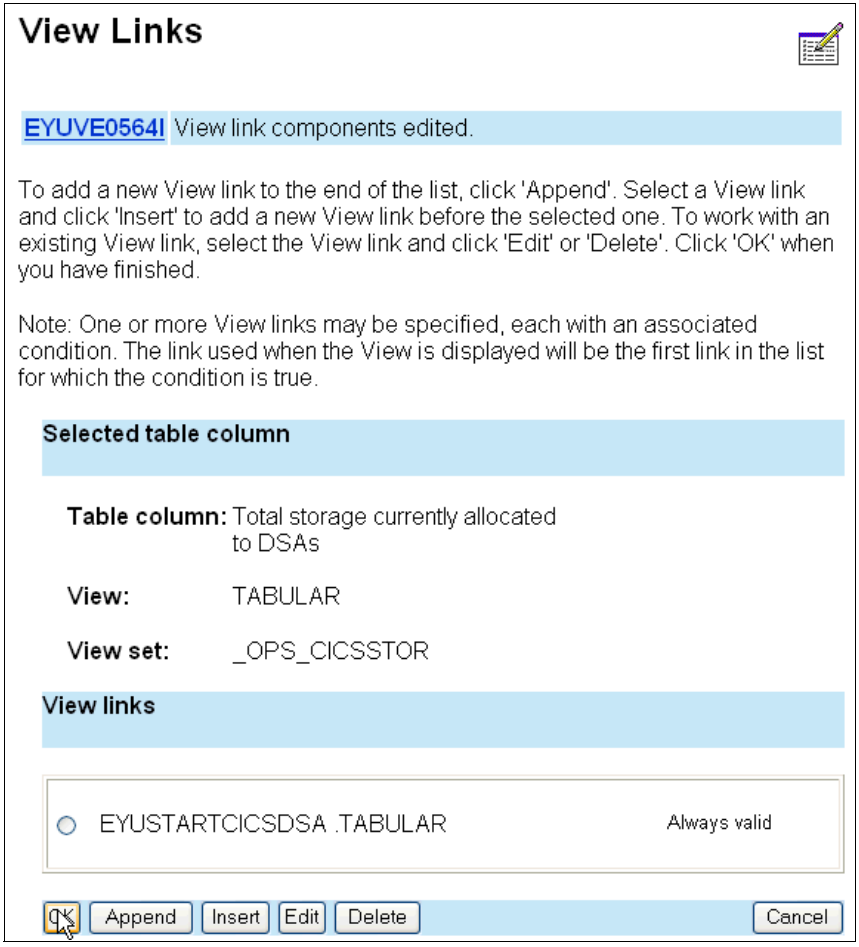


Figure 5-82 View Links window (reprise)

19. Repeat steps 13 on page 262 through 18, choosing **Total storage currently allocated to EDSAs (SMSEDSATOTAL)**. Because we are examining EDSAs, the filter defined in steps 15 on page 263 and 16 on page 264 should select CICSDSA resources with NAME=E+DSA.

Modify the presentation options for an attribute

Our final task in defining our tabular view is adding a warning light to Short on Storage status (SMSSOSSTATUS). This light is green if the value is NOTSOS, yellow if the value is SOSBELOW or SOSABOVE, and red and flashing if the value is SOS.

1. In the Table Contents window (Figure 5-65 on page 248) choose **Short on Storage status (SMSSOSSTATUS)** and click **Edit**.
2. In the Table Column Components window (Figure 5-63 on page 246), click the **Presentation options** link.
3. Choose **Warning light** and click **OK** to continue (Figure 5-83).

> **Note:** Depending on the data type of the attribute, other presentation options are available. For example, attributes with numeric data types can be displayed as a bar gauge.

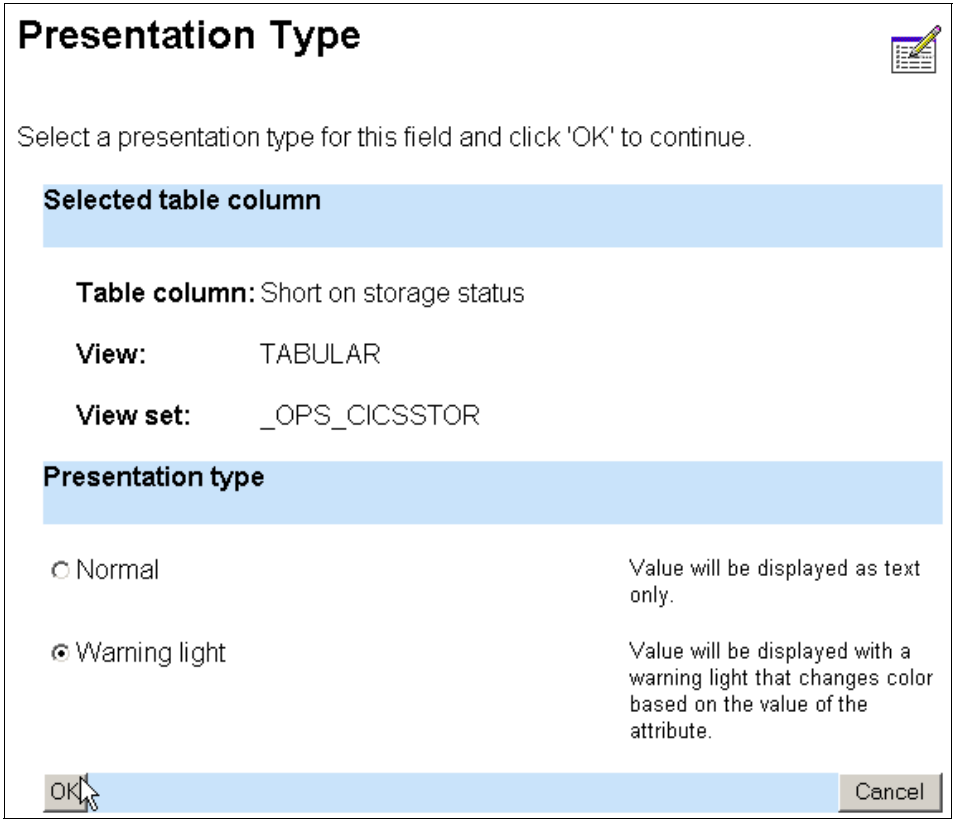


Figure 5-83 Presentation Type window

4. Click the check box for **Show value** to cause the attribute's value to be displayed in the column with the warning light (Figure 5-84). Click **OK** to continue.

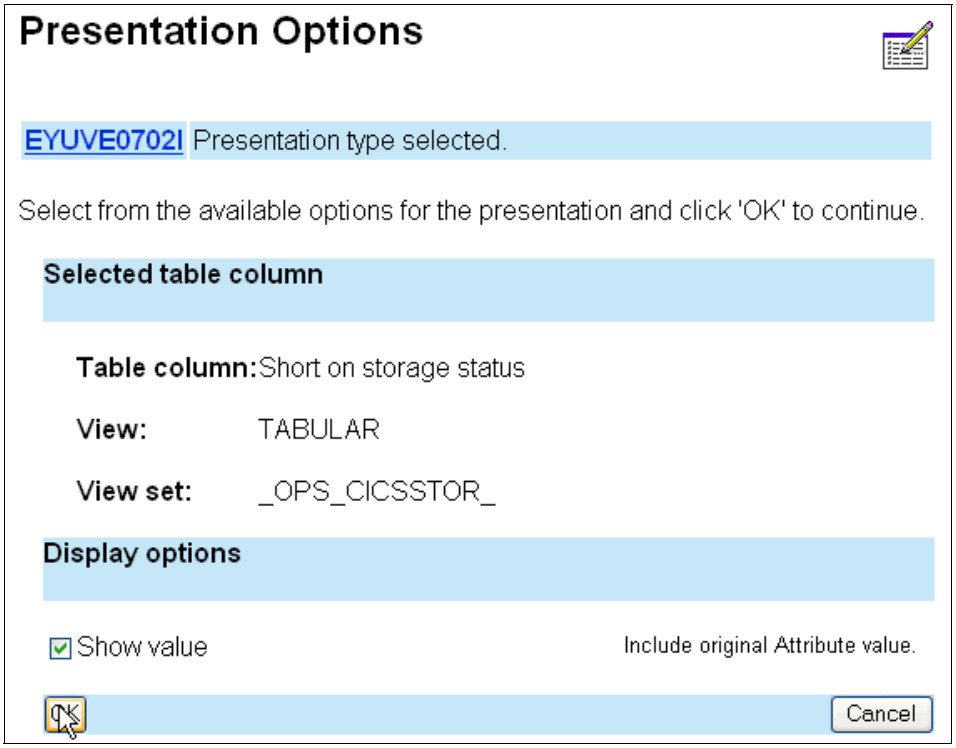


Figure 5-84 Presentation Options window

5. Here we define values or ranges of values and associate them with colors. Click **Append** to begin (Figure 5-85).

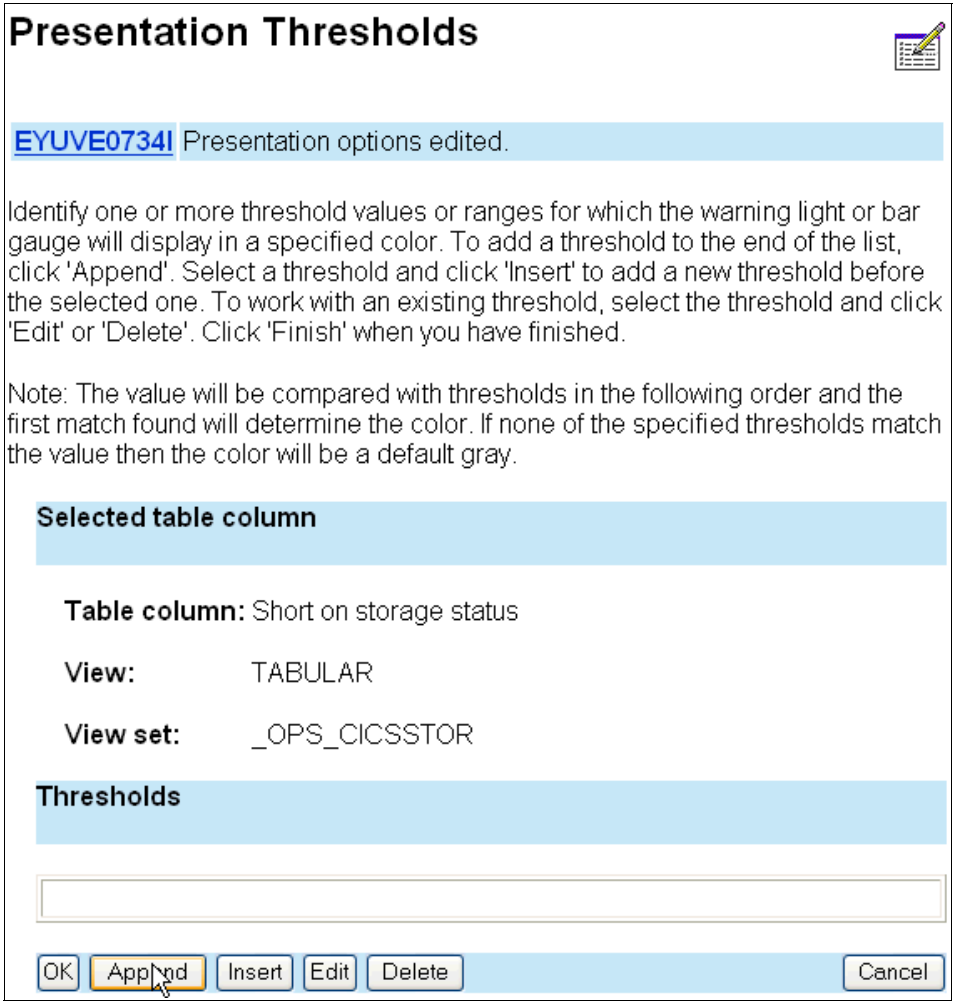


Figure 5-85 Presentation Thresholds window

6. Click the **Threshold range** link to enter a value or range (Figure 5-86).

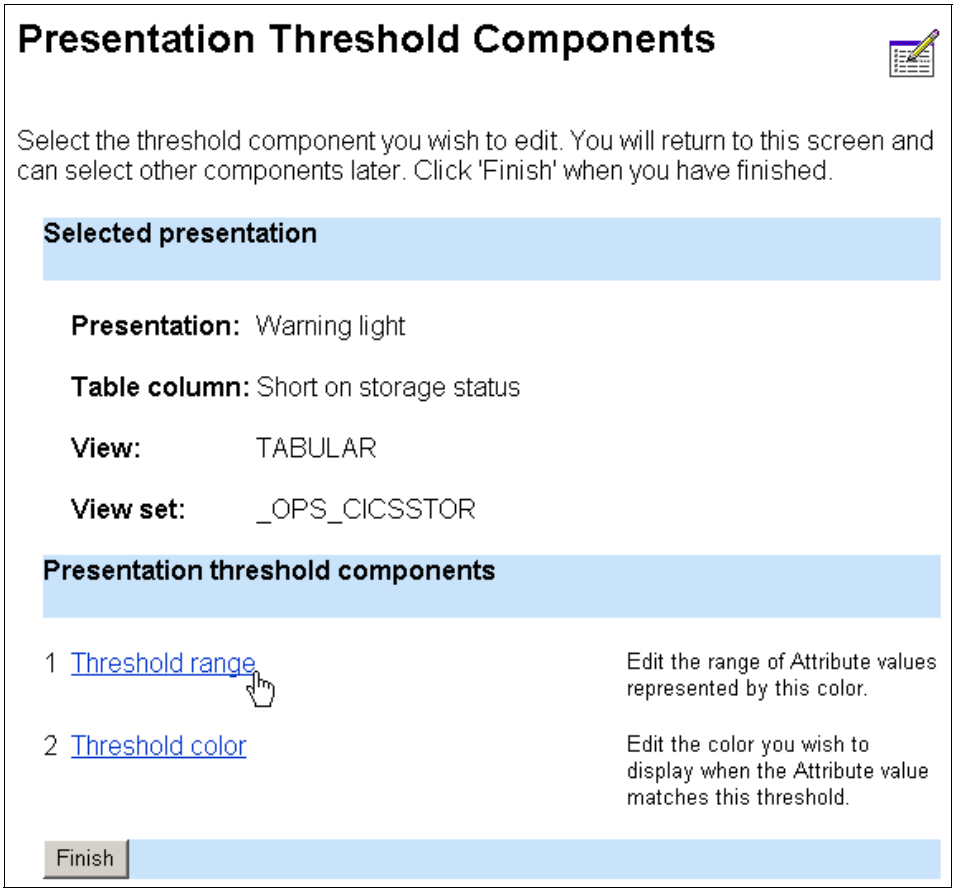


Figure 5-86 Presentation Threshold Components window

7. Choose **Equal to** and type the desired value, `NOTSOS`, in the edit box (Figure 5-87). Click **OK** to return to the Presentation Thresholds Components window (Figure 5-86 on page 269).

> **Note:** Additional options may be displayed, depending on the attribute's data type. For example, for attributes with numeric data types, you have the option of defining ranges as well as discrete values.

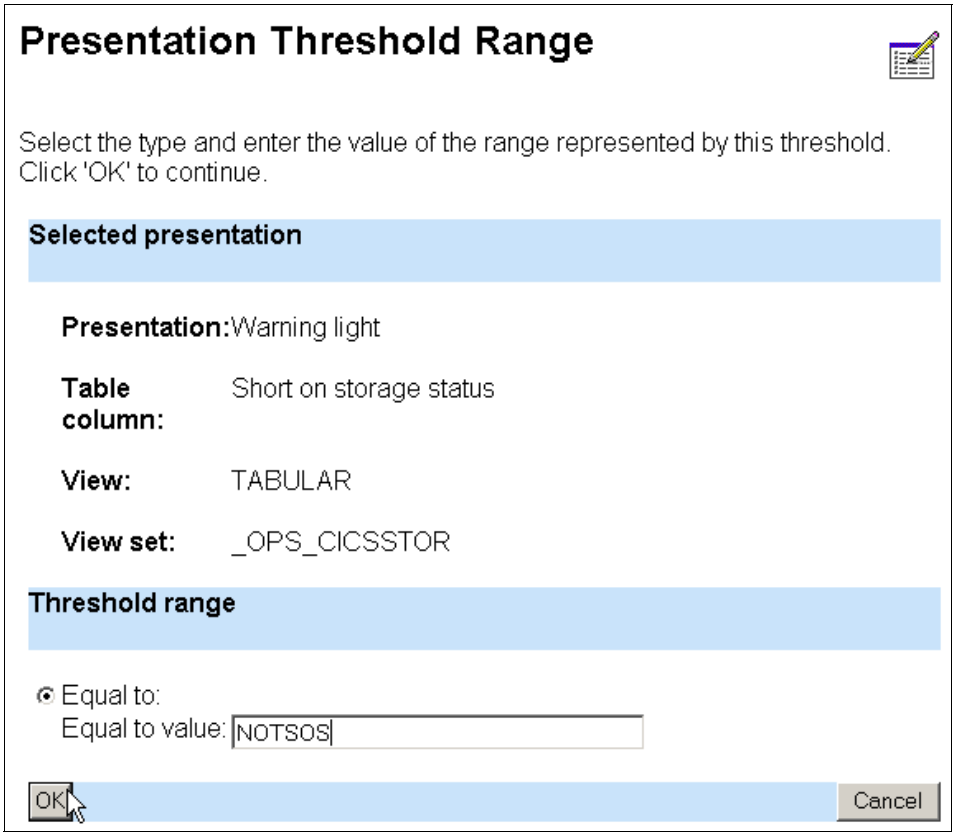


Figure 5-87 Presentation Threshold Range window

8. In the Presentation Thresholds Components window click the **Threshold color** link. This allows you to associate a threshold range with a color.

9. Choose the desired color from the list box (**GREEN** for NOTSOS) and click **OK** (Figure 5-88) to return to the Presentation Thresholds Components window (Figure 5-86 on page 269).

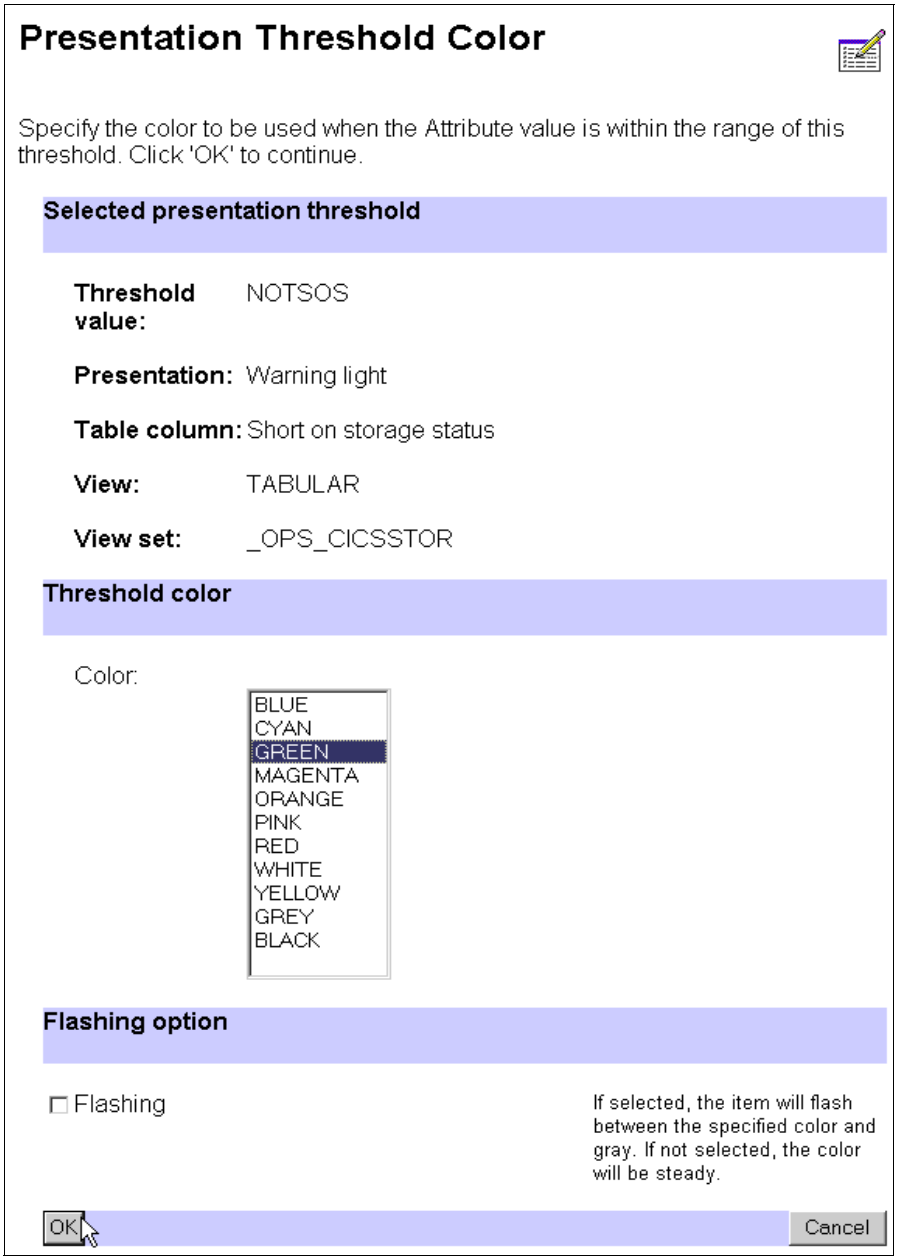


Figure 5-88 Presentation Threshold Color window

10. Repeat steps 5 on page 268 through 10 to add the following ranges:
   - SOSBELOW with **YELLOW**.
   - SOSABOVE with **YELLOW**.
   - SOS with **RED**. You may optionally select **Flashing** to cause the warning light to flash when short on storage below and above 16 MB.

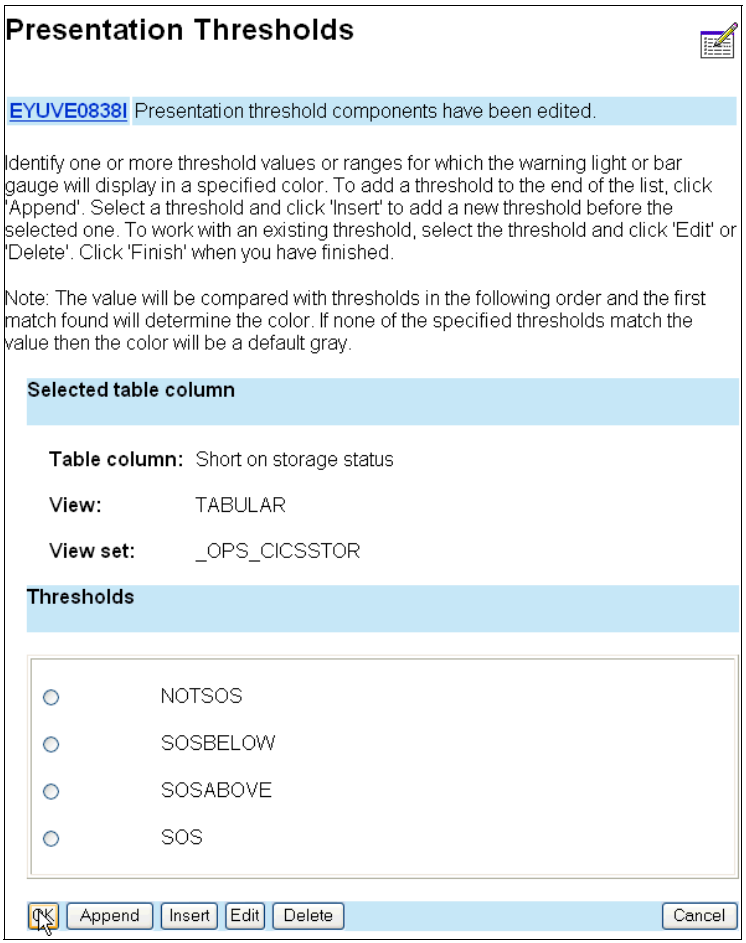


Figure 5-89 Presentation Thresholds window (reprise)

11. Click **OK** to return to the Table Column Components window (Figure 5-63 on page 246). Click **Finish** to return to the Table Contents window (Figure 5-65 on page 248). Click **OK** to return to the Tabular View Components window, where we define the remaining components of the tabular view.

Complete the definition of the tabular view

To do this:

1. In the Tabular View Components window (Figure 5-60 on page 243) click the **Title, annotation and help text** link to add a title to our tabular view.
2. Type `CICS Storage Utilization` in the Title edit box (Figure 5-90). Click **OK** to return to the Tabular View Components window.

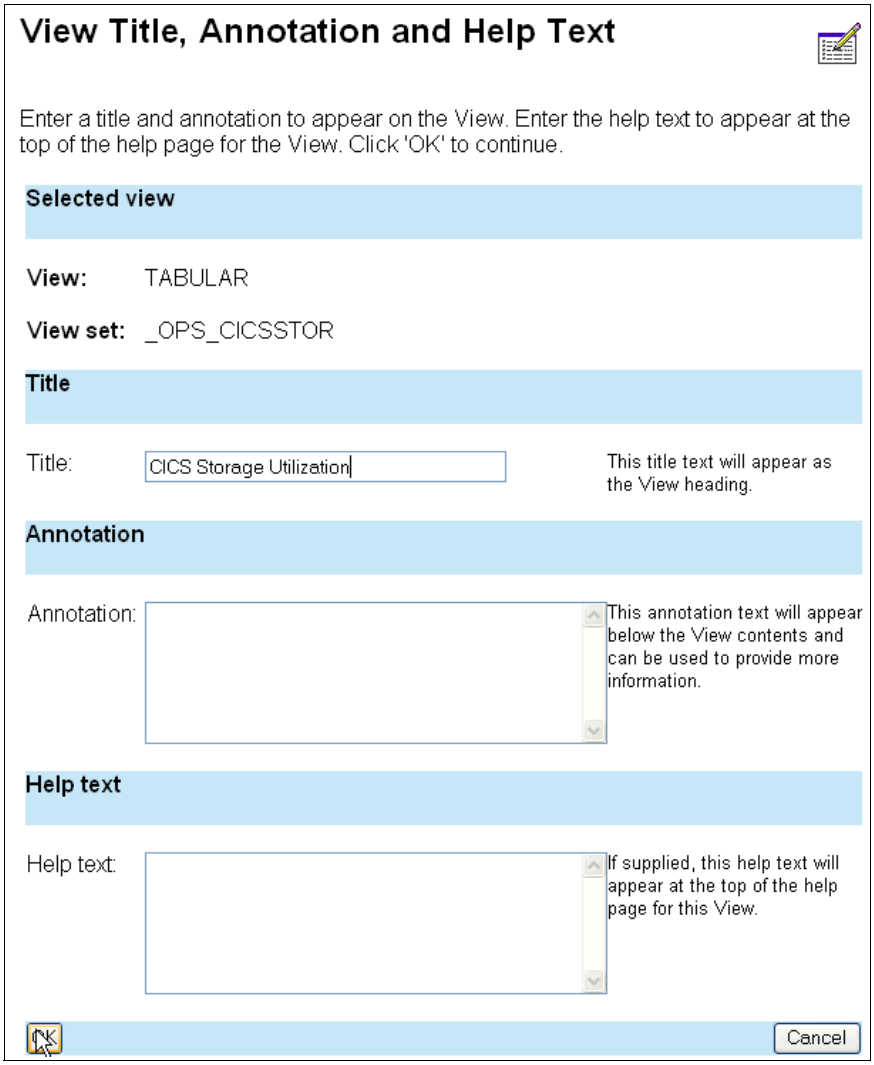


Figure 5-90 View Title, Annotation and Help Text window

3. We now define an action button to invoke a confirmation panel. This confirmation panel allows us to modify the SMSDSALIMIT and SMSEDSALIMIT attributes. Click the **Action Buttons** link in the Tabular View Components window (Figure 5-60 on page 243).
4. From the View Buttons window we can define new action buttons that will appear in the displayed view. Click **Append** to begin (Figure 5-91).

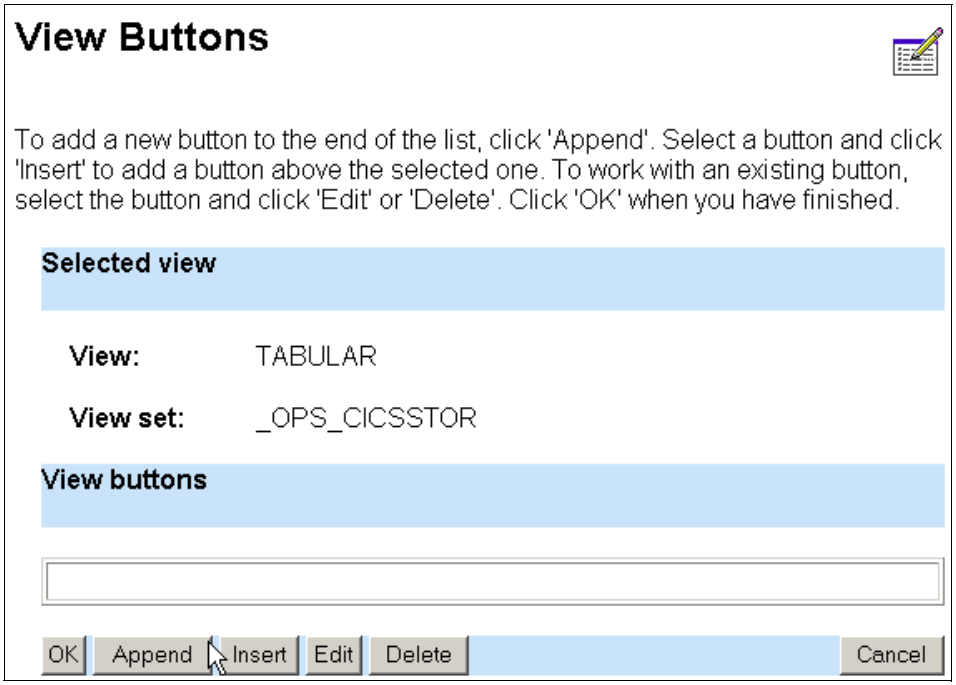


Figure 5-91 View Buttons window

5. Choose **Present panel for confirmation, possibly with additional parameters** (Figure 5-92). Click **OK** to continue.

Note: Other options are presented if there are modifiable fields in the view.

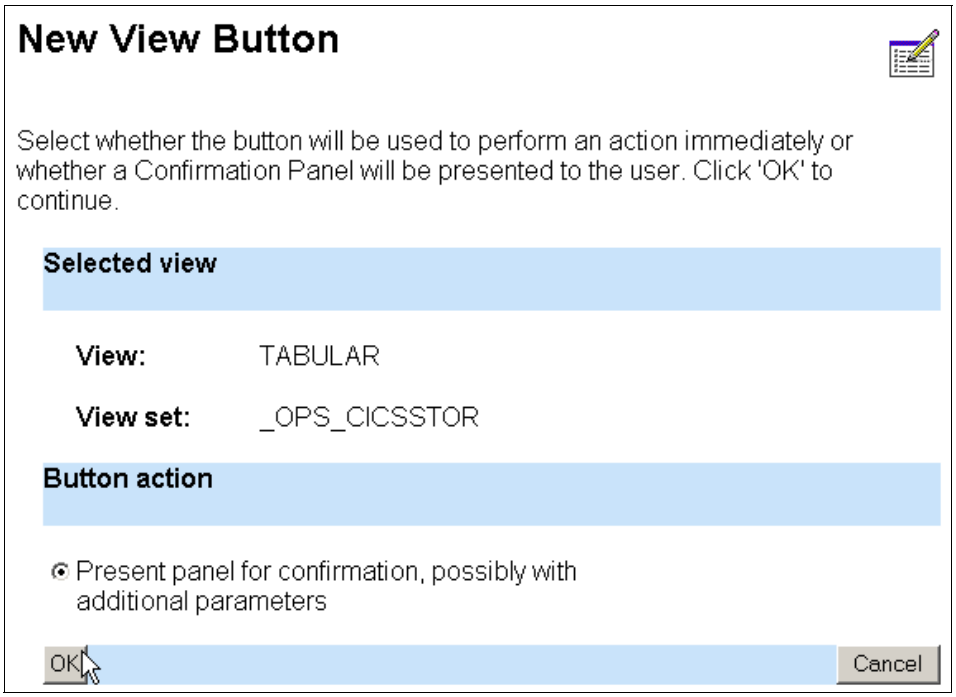


Figure 5-92 New View Button window

6. Type `Update limit` in the Name edit box as the name that will appear on the action button and `UpdateDSA` in the Confirmation panel name edit box (Figure 5-93). We create the confirmation panel later. Click **OK** to continue.

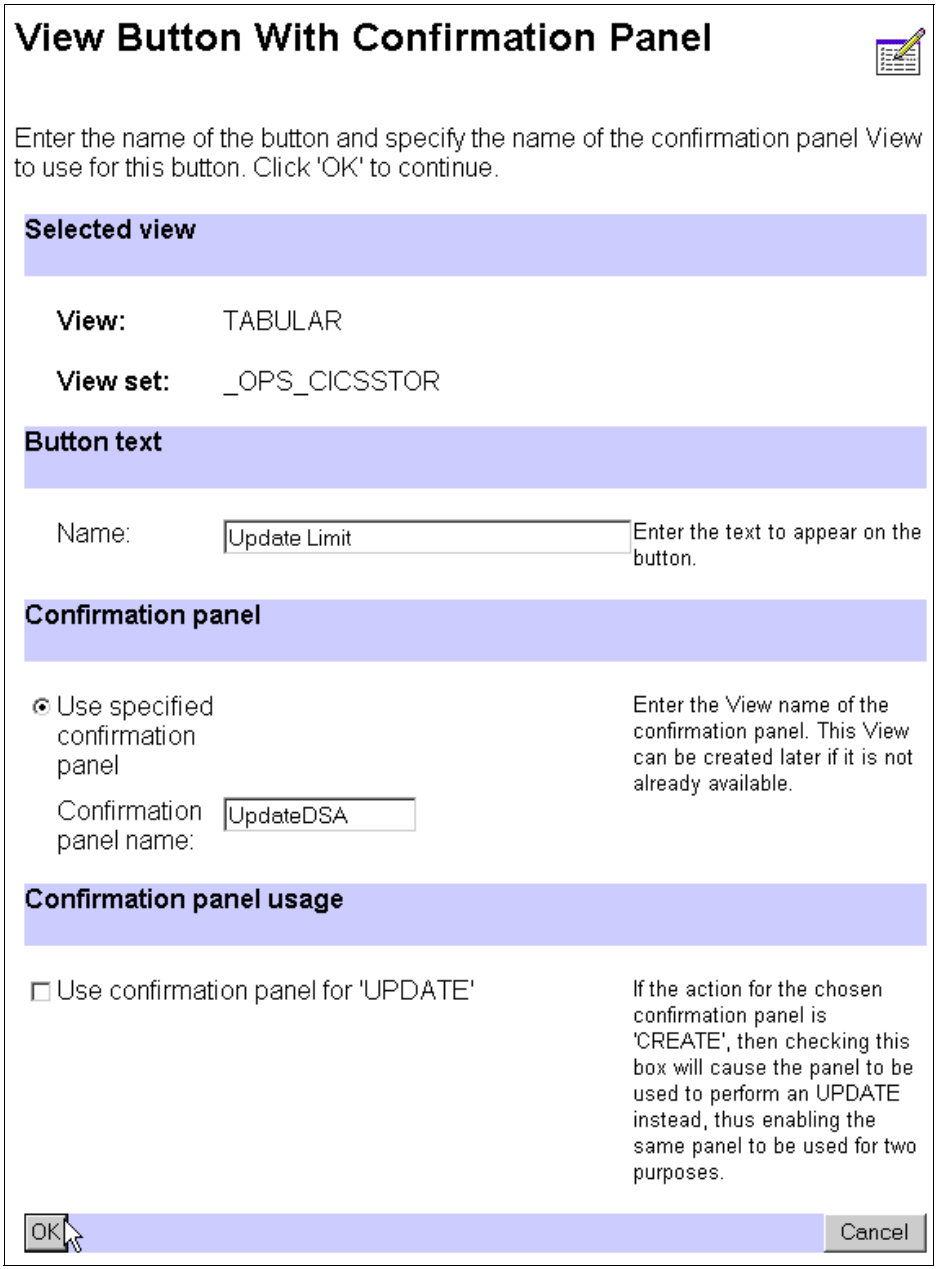


Figure 5-93 View Button With Confirmation Panel window

7. Click **OK** (Figure 5-94) to return to the Tabular View Components window (Figure 5-60 on page 243).

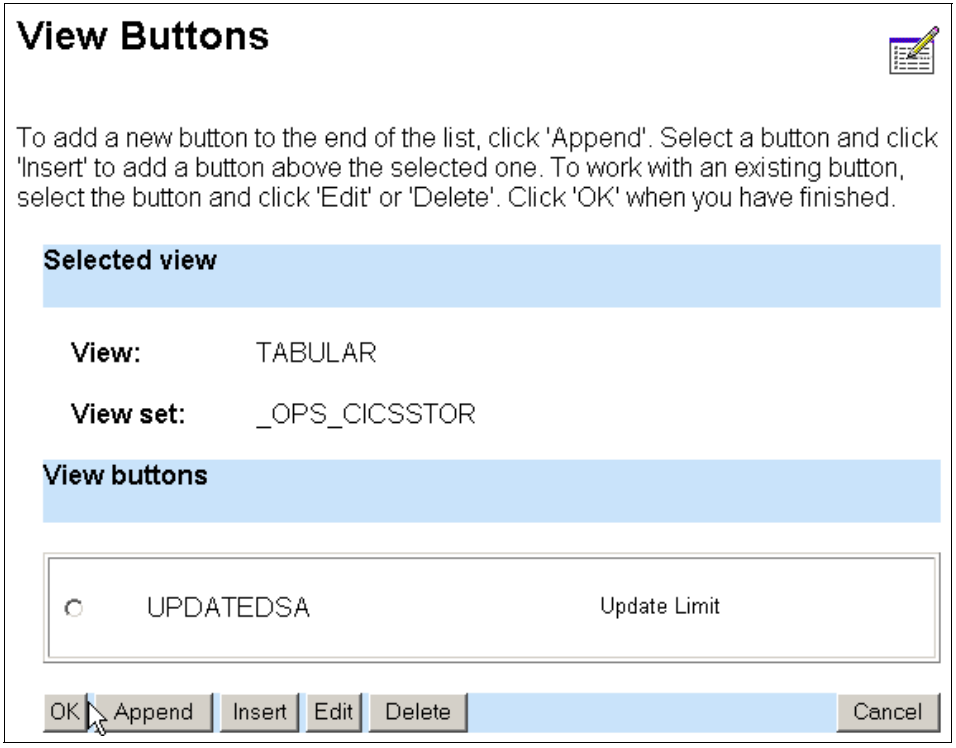


Figure 5-94 View Buttons window (reprise)

8. We do not have a custom help panel for this view, nor do we need to add any data filters. Click the **Context and Scope options** link.

9. We want the user to be able to modify the context and scope values, so choose **Normal** for context and scope. CMAS context is not applicable to CICS resource views, so choose **Hidden** to suppress its display (Figure 5-95). Click **OK** to return to the Tabular View Components window.

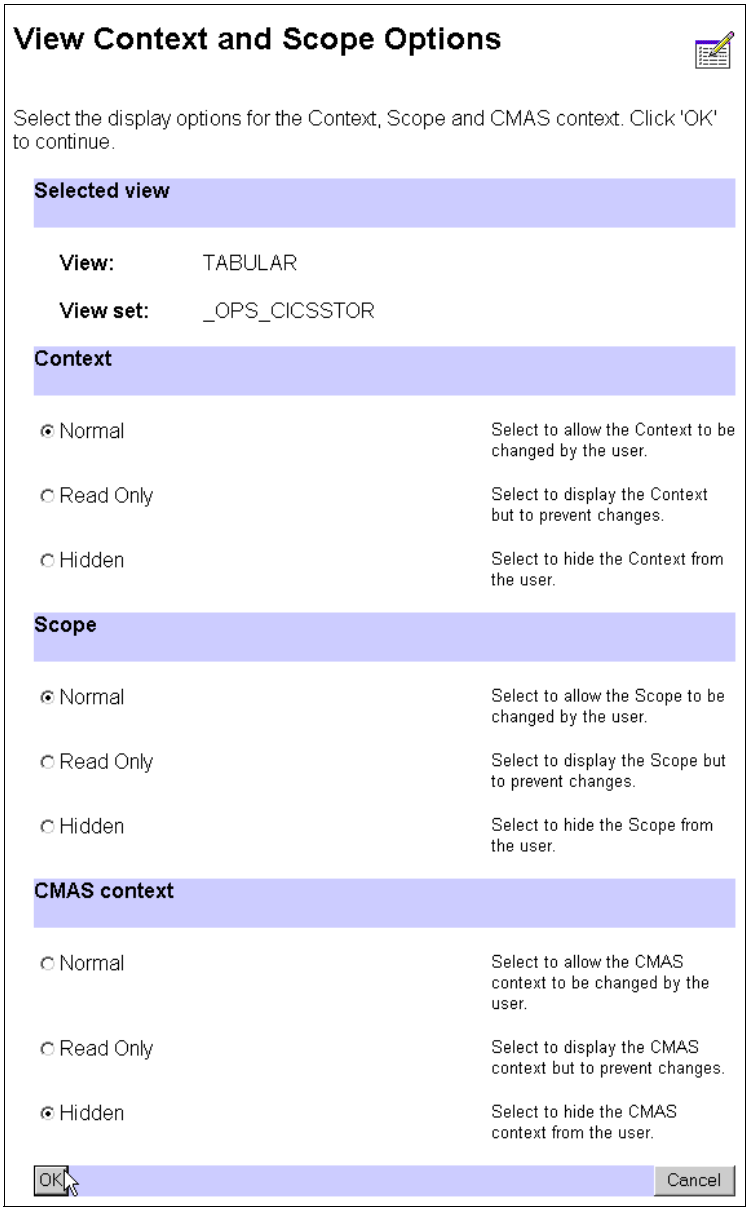


Figure 5-95 View Context and Scope Options window

10. In the Tabular View Components window (Figure 5-60 on page 243) click the **Tabular View display options** link. This is the final step in creating the new tabular view.

11. Click the check box for **Make this the default View**. Choose **Automatic refresh available** and set automatic refresh delay to 15 seconds (Figure 5-96 on page 280). Click the check box for Select all control available. Enter 25 in the Maximum number of rows edit box. This provides a workable balance between limiting the need to scroll to view resources on a page and displaying selected resources in the minimum number of pages. Click **OK** to return to the Tabular View Components window.

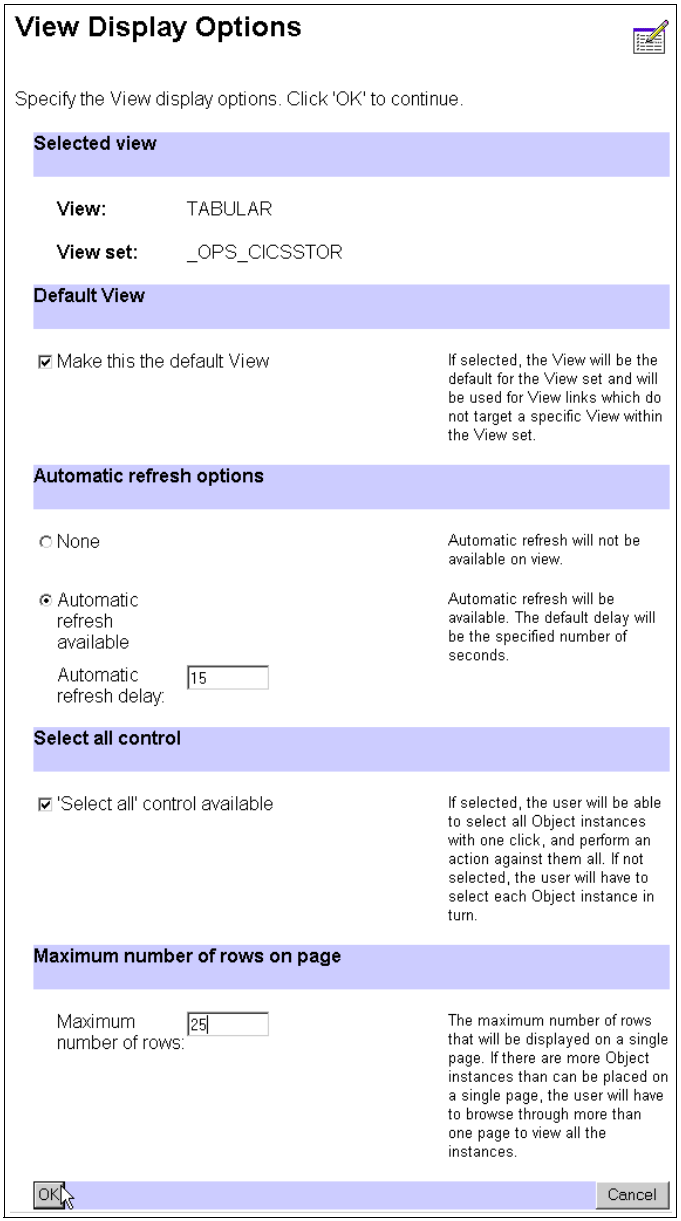


Figure 5-96 View Display Options window

12. In the Tabular View Components window (Figure 5-60 on page 243) click **OK** to return to the View Set Contents window.

Create the detailed view

Our detailed view displays the name of the CICS region, the short-on-storage status, the total size of the DSAs and EDSAs, the current DSA and EDSA limit values, and the current size and cushion size of each of the CICS DSAs. The DSA and EDSA limits will be modifiable fields, and we define an action button to allow the DSA limits to be updated. This view has no hyperlinks.

1. Click **Add** in the View Set Contents window (Figure 5-58 on page 241).
2. In the Add View window (Figure 5-59 on page 242), type the view name, `DETAILED`, in the edit box. Choose **Two column detail form** for view type and **Key fields only** for the pre-fill option. Click **OK** to continue.

3. In the Detailed Form Components window click the **Form contents** link (Figure 5-97).

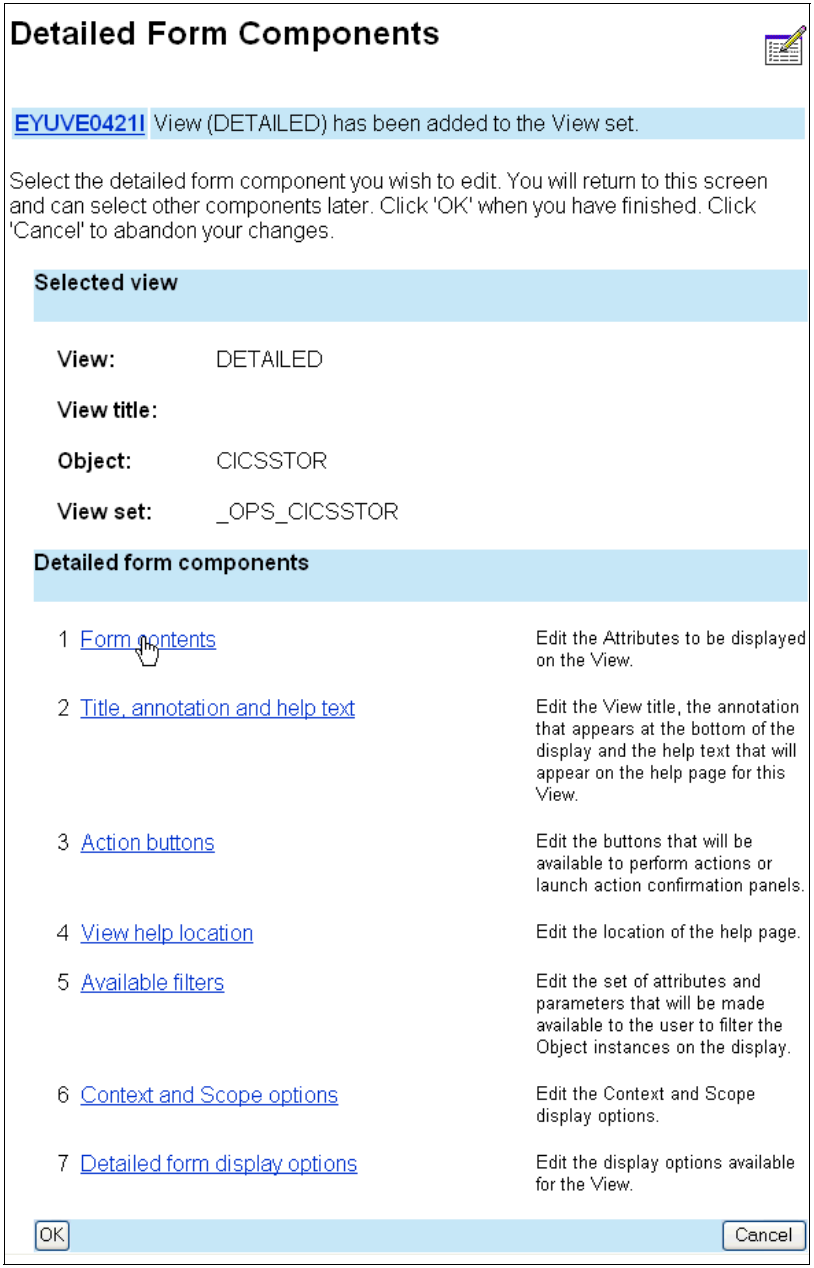


Figure 5-97 Detailed Form Components window

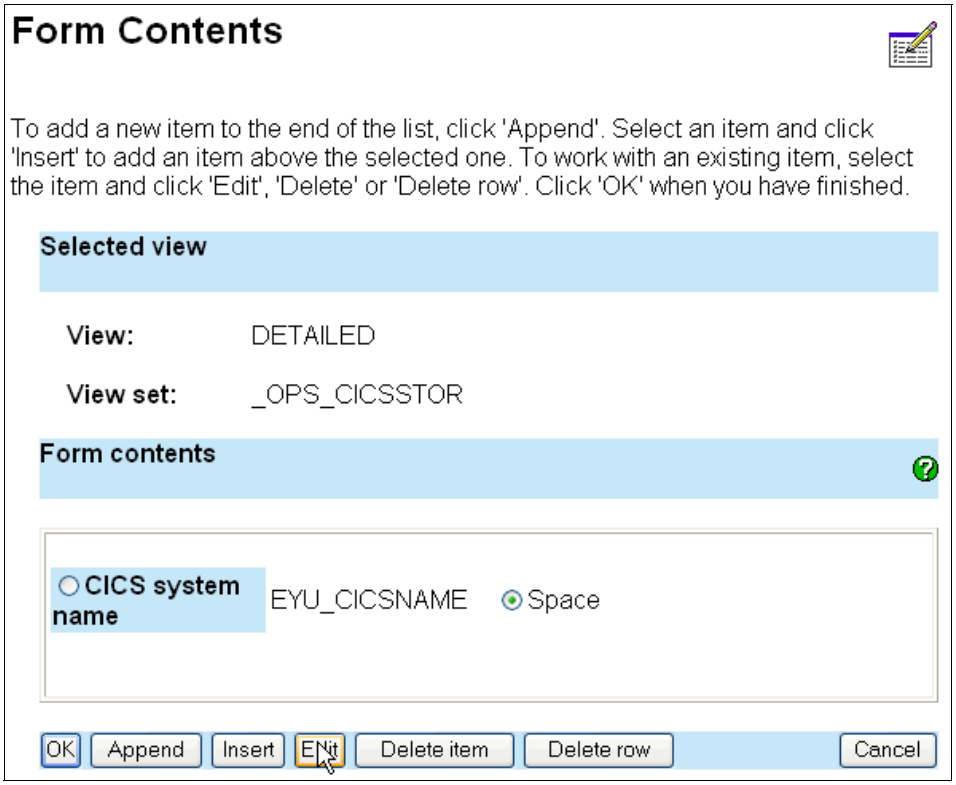


Figure 5-98 Form Contents window

4. At this time, the Form Contents window displays a single line containing `CICS system name (EYU_CICSNAME)` and `Space`. Choose **Space** and click **Edit** (Figure 5-99).

> **Note:** When creating or editing a detailed view using the two-column form, the Append and Insert buttons add a row to the form and define the element in the left column. The element in the right column is initialized as Space. After the element in the left column is defined, choose **Space** and click **Edit** to complete the definition of the element in the right column.

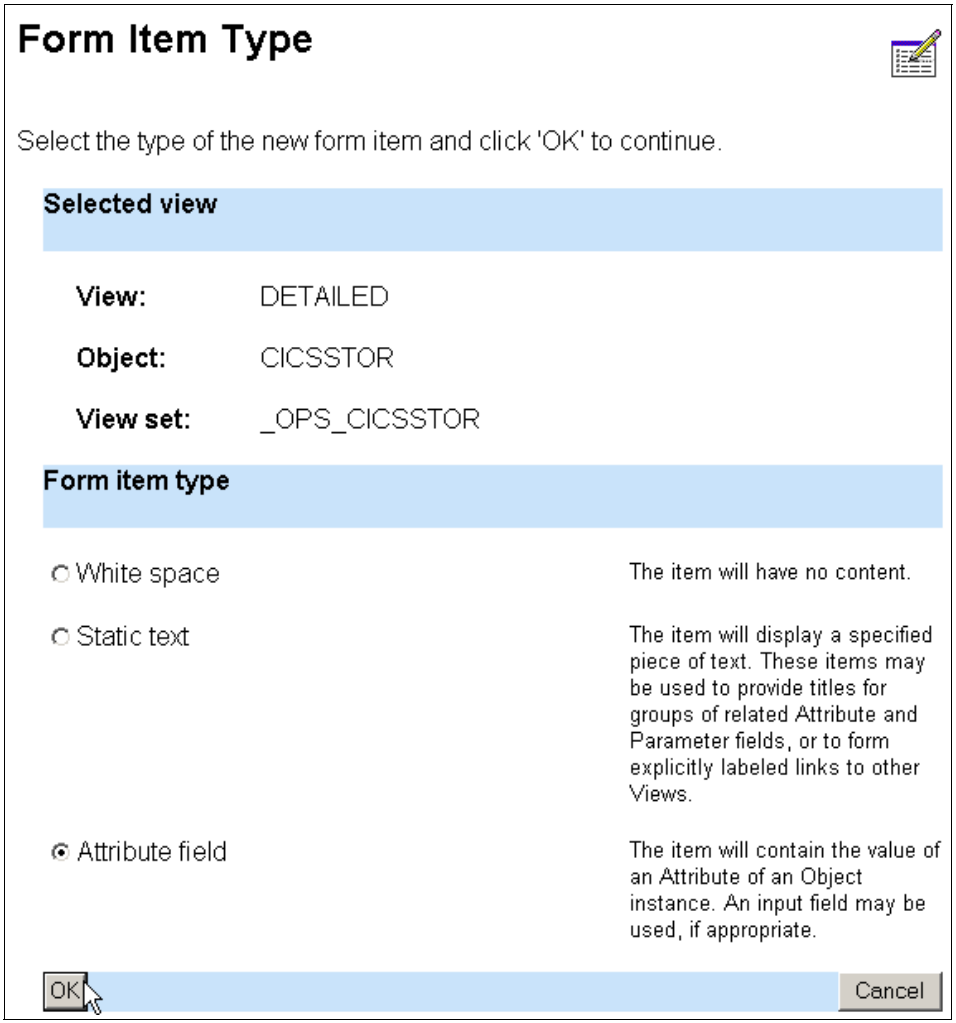


Figure 5-99 Form Item Type window

5. Choose **Attribute field** and click **OK**.
6. Choose **SMSSOSSTATUS (Short on storage status)** from the Attribute list box and click **OK** to continue (Figure 5-100). Click **Finish** to return to the Form Contents window.

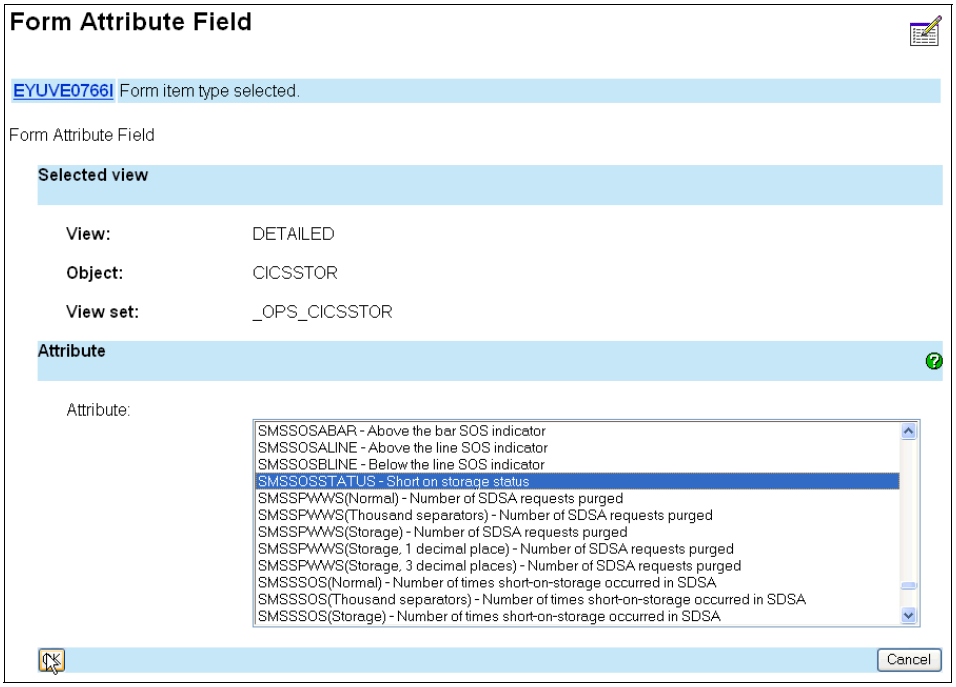


Figure 5-100 Form Attribute Field window

7. Click **Append** to add a new row to the form. Choose **Attribute field** in the Form Item Type window and click **OK**. Choose **SMSDSATOTAL (Storage)** in the Form Attribute Field window and click **OK**.

8. Since we want to accept the default display attributes for this field, click **Finish** in the Form Item Components window (Figure 5-101).

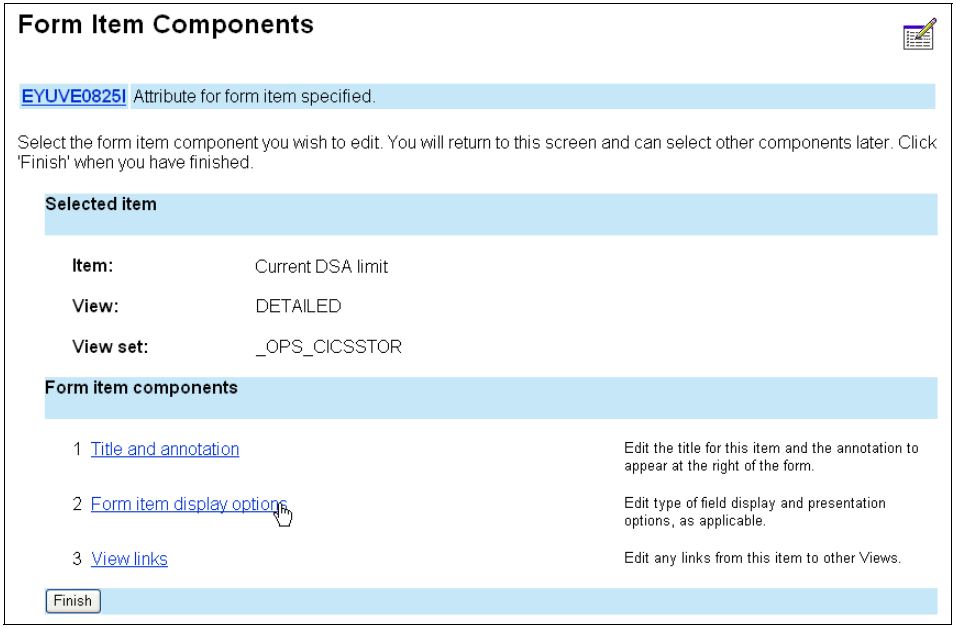


Figure 5-101 Form Item Components window

9. Choose **Space** in the right column of the Form Contents window (Figure 5-98 on page 283) and click **Edit**. Choose **Attribute field** in the Form Item Type window (Figure 5-99 on page 284) and click **OK**. Choose **SMSDSALIMIT (Storage)** in the Form Attribute Field window (Figure 5-100 on page 285) and click **OK**.

10. We want to make this field modifiable, so in the Form Item Components window (Figure 5-101 on page 286) click the **Form item display options** link. Choose **Entry field** in the Display option and entry mechanism section (Figure 5-102). Click **OK** to continue.

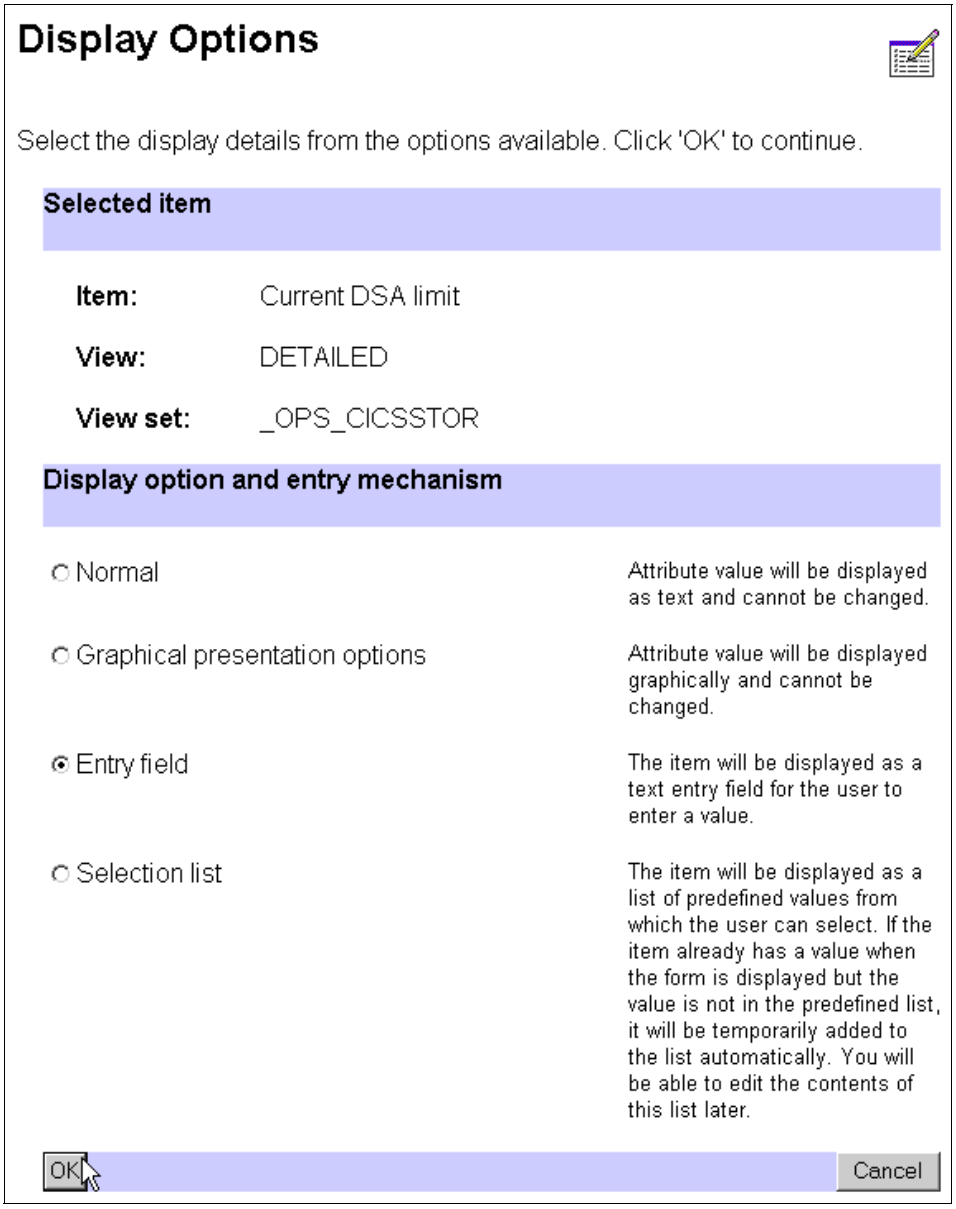


Figure 5-102 Display Options window

11. Click **Finish** in the Form Item Components window (Figure 5-101 on page 286).
12. Repeat steps 7 on page 285 through 11 to add a row containing SMSEDSATOTAL (Storage) in the left column and SMSEDSALIMIT (Storage) as an entry field in the right column.
13. Repeat steps 7 on page 285 through 11 to add rows containing the following fields. None of these fields are modifiable, so step 10 on page 287 can be omitted.
    - SMSCDSASZ (Storage) in the left column, SMSECDSASZ (Storage) in the right column
    - SMSCCSIZE (Storage) in the left column, SMSECCSIZE (Storage) in the right column
    - SMSRDSASZ (Storage) in the left column, SMSERDSASZ (Storage) in the right column
    - SMSRCSIZE (Storage) in the left column, SMSERCSIZE (Storage) in the right column
    - SMSSDSASZ (Storage) in the left column, SMSESDSASZ (Storage) in the right column
    - SMSSCSIZE (Storage) in the left column, SMSESCSIZE (Storage) in the right column
    - SMSUDSASZ (Storage) in the left column, SMSEUDSASZ (Storage) in the right column
    - SMSUCSIZE (Storage) in the left column, SMSEUCSIZE (Storage) in the right column
14. In the Form Contents window (Figure 5-98 on page 283) choose **Current Size of CDSA (SMSCDSASZ)** and click **Insert** to add a row before this one.
15. Choose **Static text** in the Form Item Type window (Figure 5-99 on page 284) and click **OK**.
16. On the Form Item Components window click the **Title and annotation** link.

17. In the Form Title and Annotation window type `DSA statistics` in the Title edit box (Figure 5-103). Click **OK** to continue. Click **Finish** in the Form Item Components window.

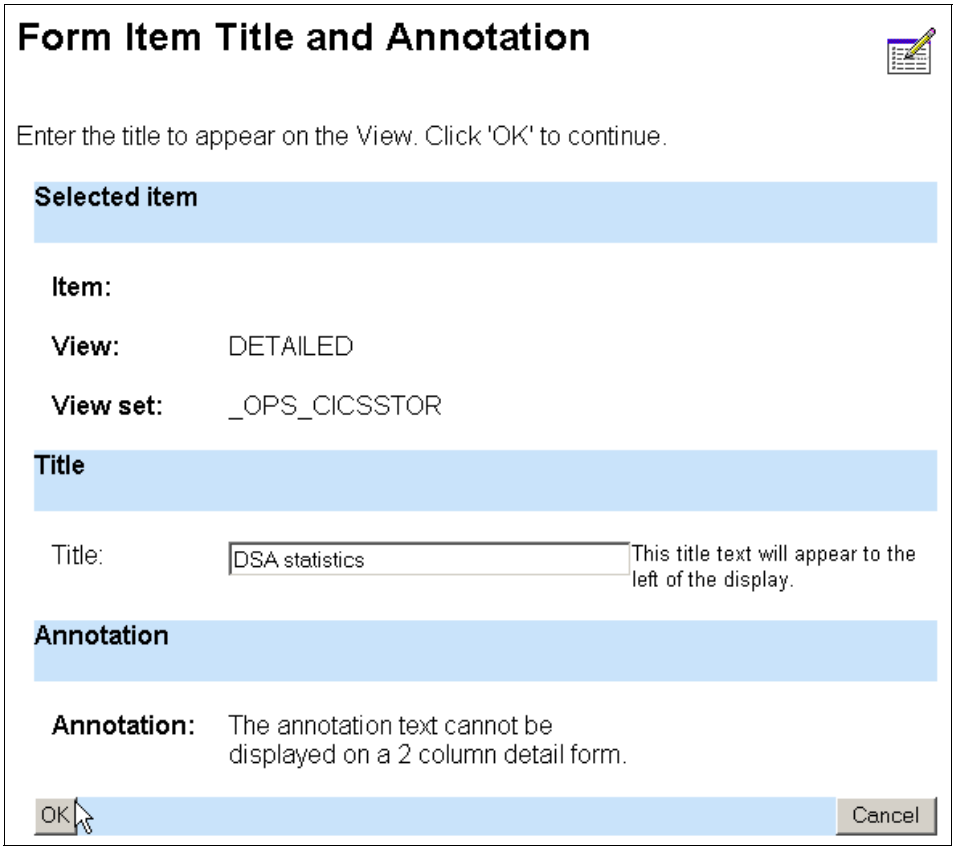


Figure 5-103 Form Title and Annotation window

18. Choose **Space** in the right column of the Form Contents window (Figure 5-98 on page 283) and click **Edit**.
19. Choose **Static text** in the Form Item Type window (Figure 5-99 on page 284) and click **OK**.
20. In the Form Item Components window click the **Title and annotation** link.
21. In the Form Title and Annotation window type `EDSA statistics` in the Title edit box. Click **OK** to continue. Click **Finish** in the Form Item Components window.

22. We are done adding fields to the detailed view, so click **OK** to continue (Figure 5-104).

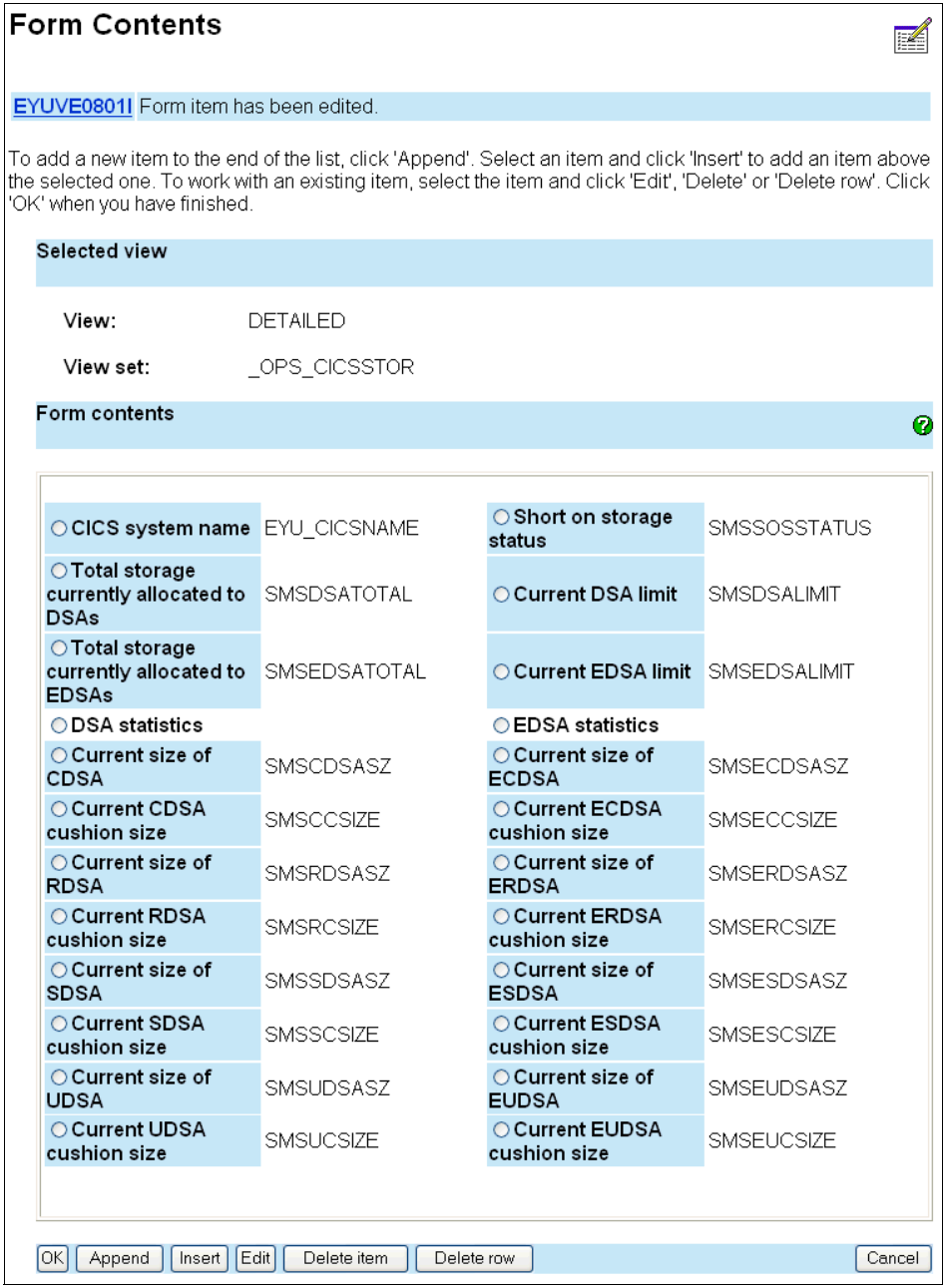


Figure 5-104 Form Contents window (reprise)

23. Click the **Title, annotation and help text** link to define a title for the view (Figure 5-105).

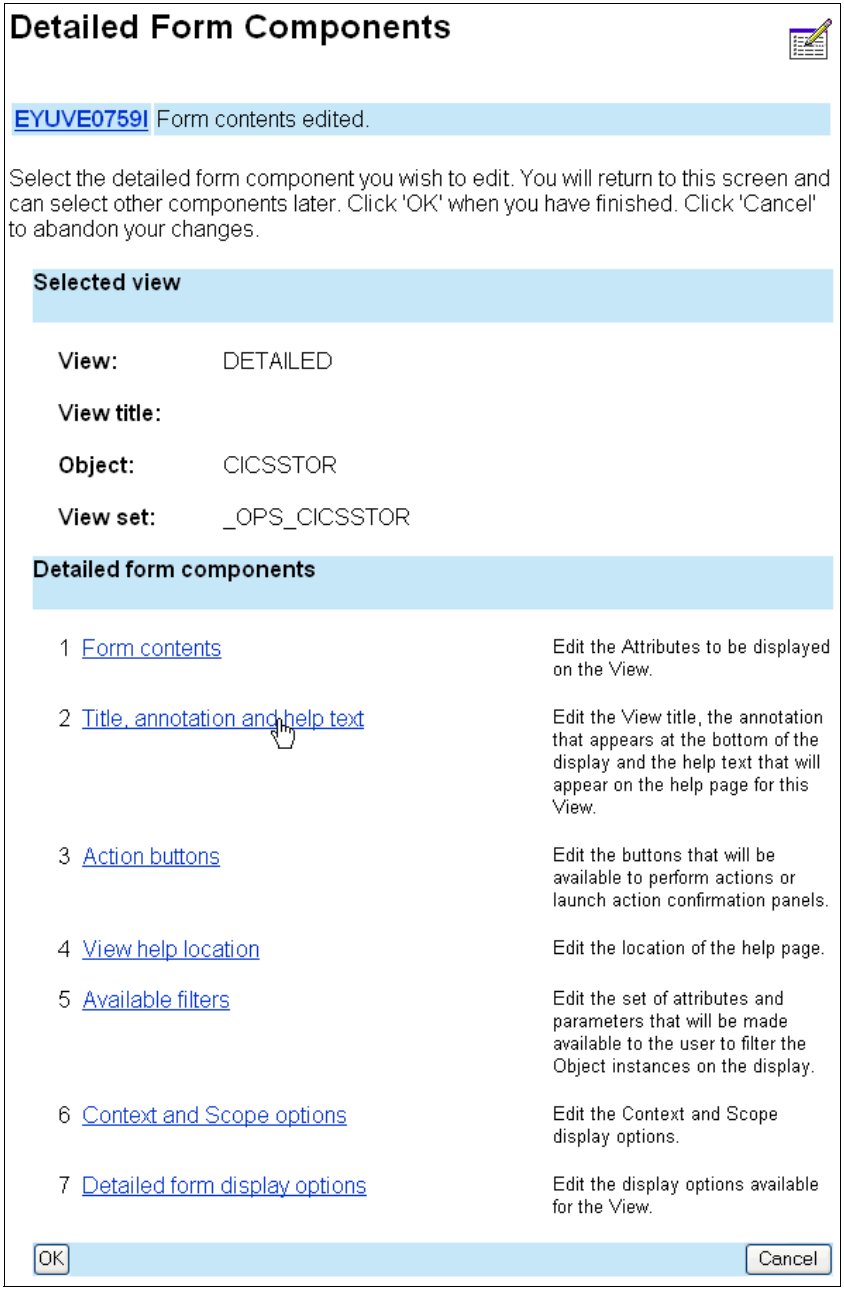


Figure 5-105 Detailed Form Components window

24. In the View Title, Annotation and Help Text window (Figure 5-90 on page 273), type `CICS Storage Capacity` in the Title list box and click **OK** to return to the Detailed Form Components window.
25. In the Detailed Form Components window (Figure 5-105 on page 291) click the **Action** buttons link.
26. Click **Append** to define a new action button for the detailed view (Figure 5-106).

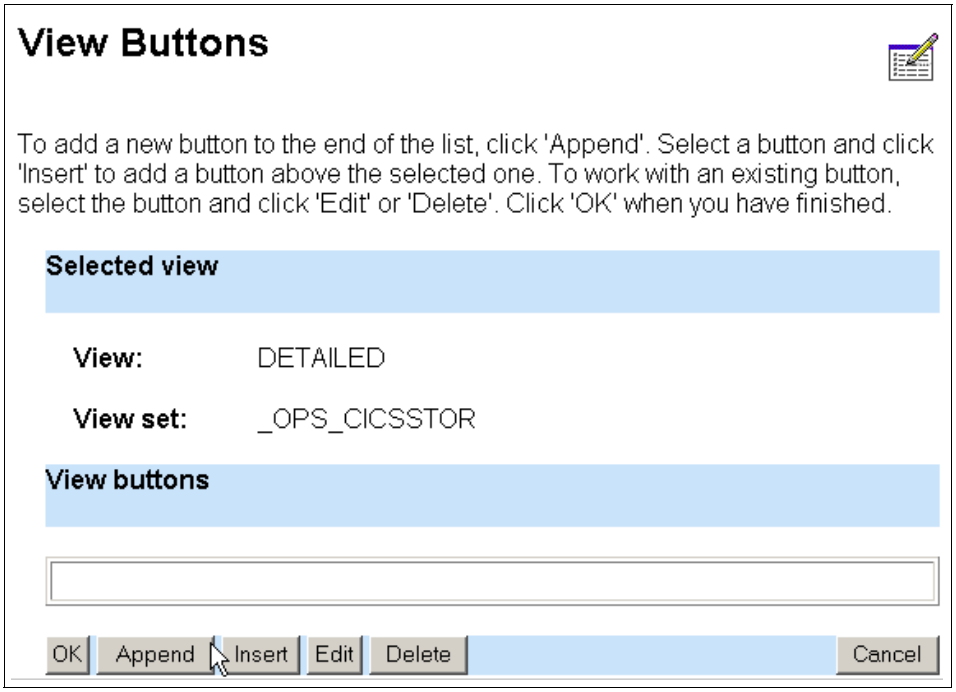


Figure 5-106 View Buttons window (reprise)

27. Because we have defined fields in the view as entry fields, we are presented with two options in the New View Button window. Choose **Immediate action** and click **OK** (Figure 5-107).

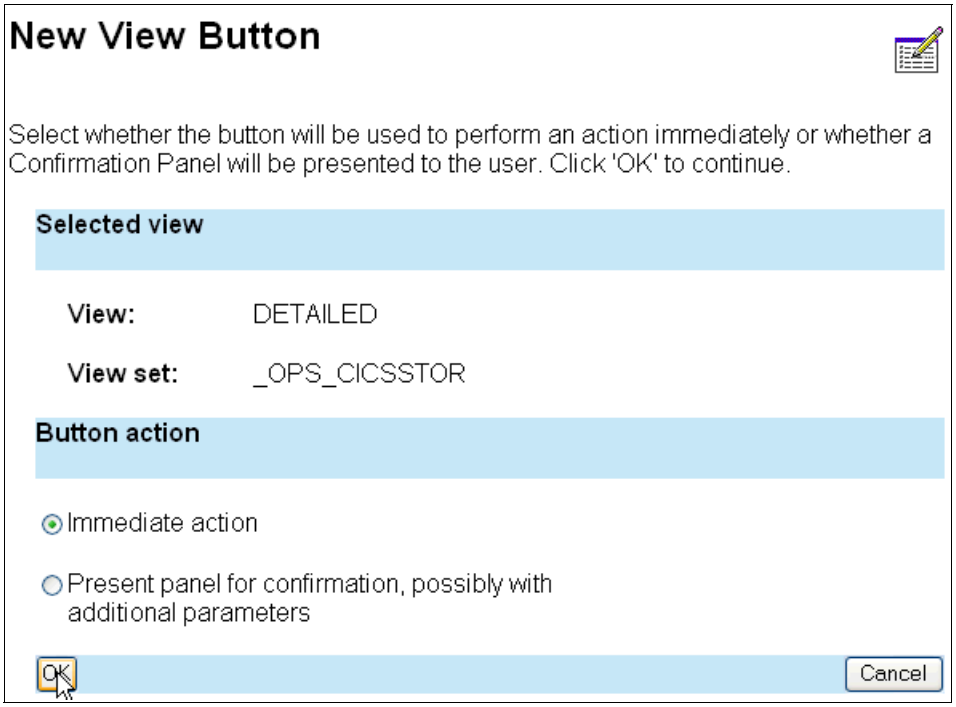


Figure 5-107 New View Button properties

28. In the View Button With Immediate Action window type `Update limit` in the Button text edit box. Choose **SET** from the Action list box (Figure 5-108). Click **OK** to return to the View Buttons window.

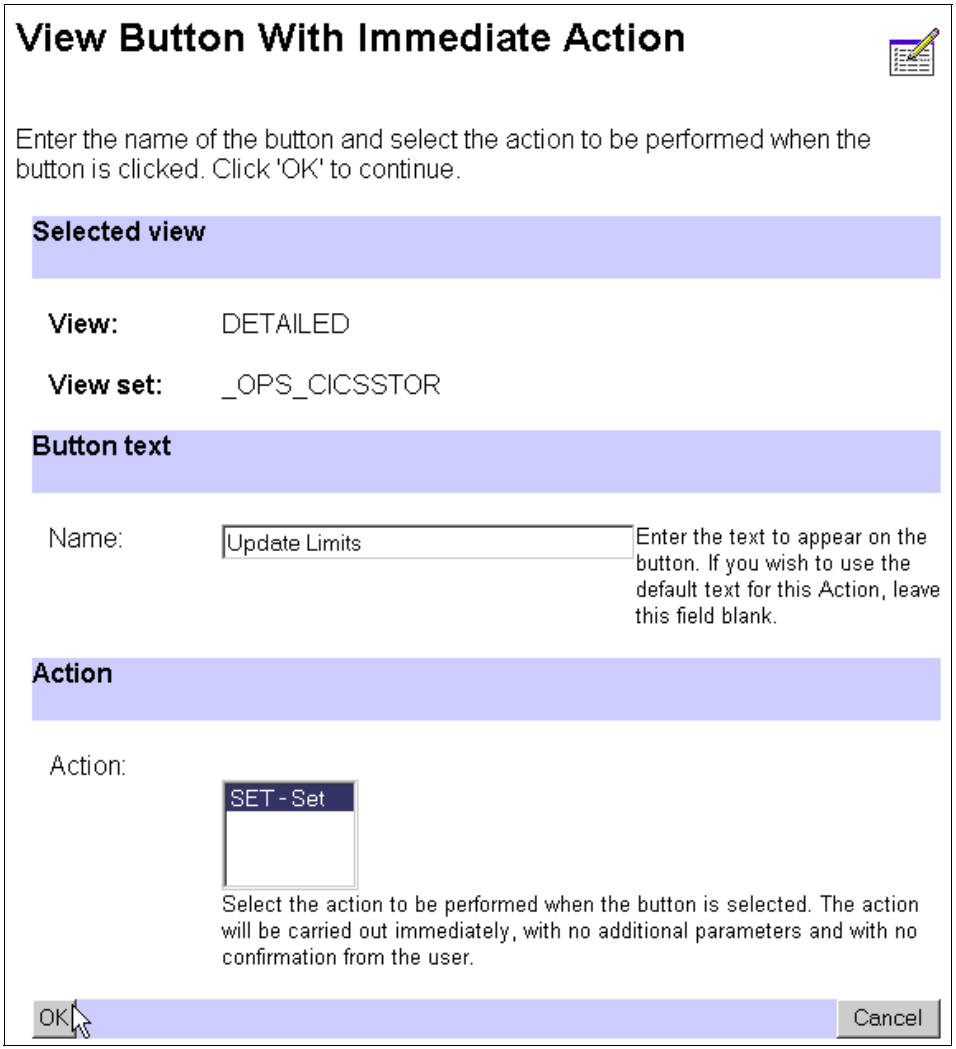


Figure 5-108 View Button With Immediate Action window

29. In the View Buttons window click **OK** (Figure 5-109) to return to the Detailed Form Components window (Figure 5-105 on page 291).

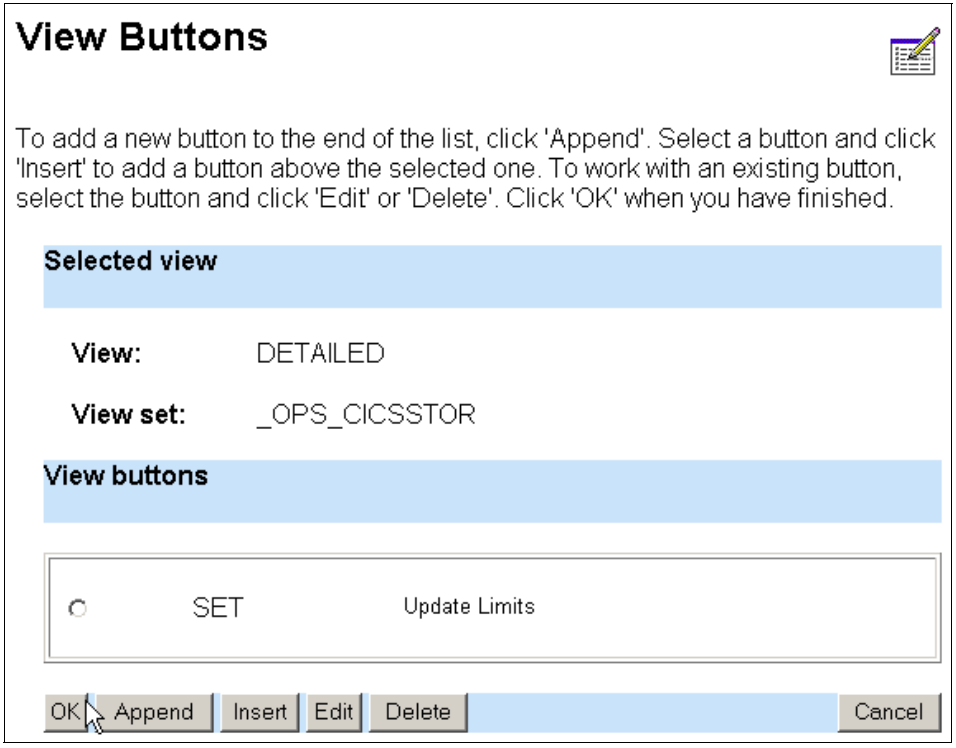


Figure 5-109 View Buttons window (reprise)

30. We do not have a custom help panel for this view, nor do we need to add any data filters. Click the **Context and Scope options** link.
31. We want the user to be able to modify his context and scope values, so in the View Context and Scope Options window (Figure 5-95 on page 278) choose **Normal** for context and scope. CMAS context is not applicable to CICS resource views so choose **Hidden** to suppress its display. Click **OK** to return to the Detailed Form Components window.
32. In the Detailed Form Components window (Figure 5-97 on page 282), click the **Detailed form display options** link.

33. For the detailed view, leave the Make this the default view check box unselected. Choose **None** from Automatic refresh options (Figure 5-110). Click **OK** to return to the Detailed Form Components window.

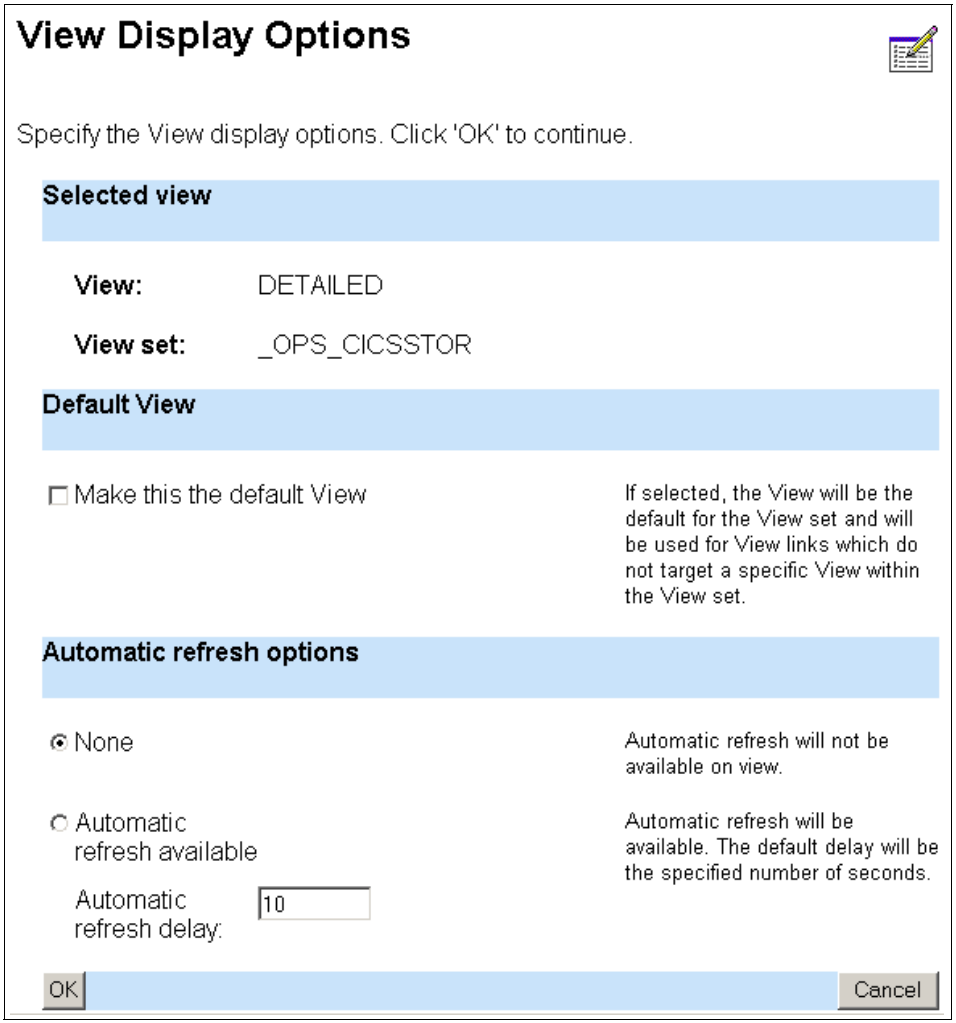


Figure 5-110 View Display Options window (reprise)

34. In the Detailed Form Components window (Figure 5-97 on page 282) click **OK** to return to the View Set Contents window.

Create the confirmation panel

The final component of our view set is the confirmation panel, which is displayed by clicking the **Update Limit** button in the tabular view.

1. In the View Set Contents window (Figure 5-58 on page 241), click **Add** to add another object to the view set.
2. In the Add View window (Figure 5-59 on page 242) type `UpdateDSA` in the View name edit box. Choose **Confirmation panel** for view type and **Key attributes** for the pre-fill option. Click **OK** to continue.
3. Each confirmation panel is associated with an action. In the Confirmation Panel Action window choose **SET** and click **OK** (Figure 5-111).

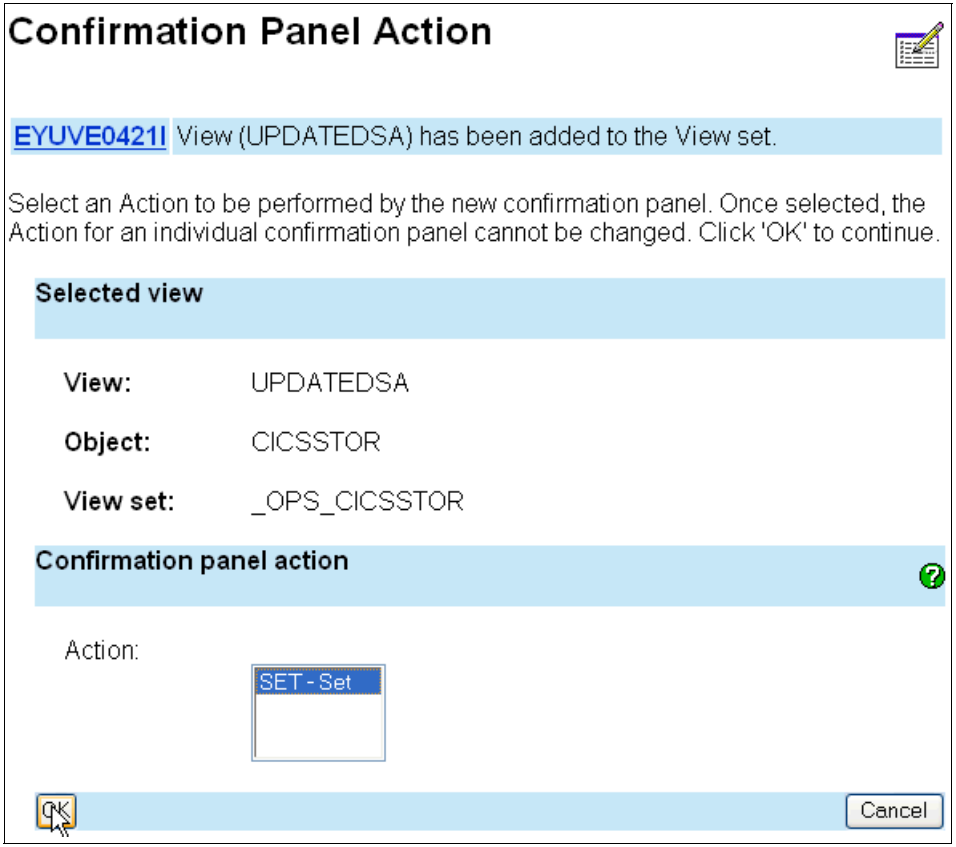


Figure 5-111 Confirmation Panel Action

4. In the Confirmation Panel Contents window click the **Form Contents** link (Figure 5-112).

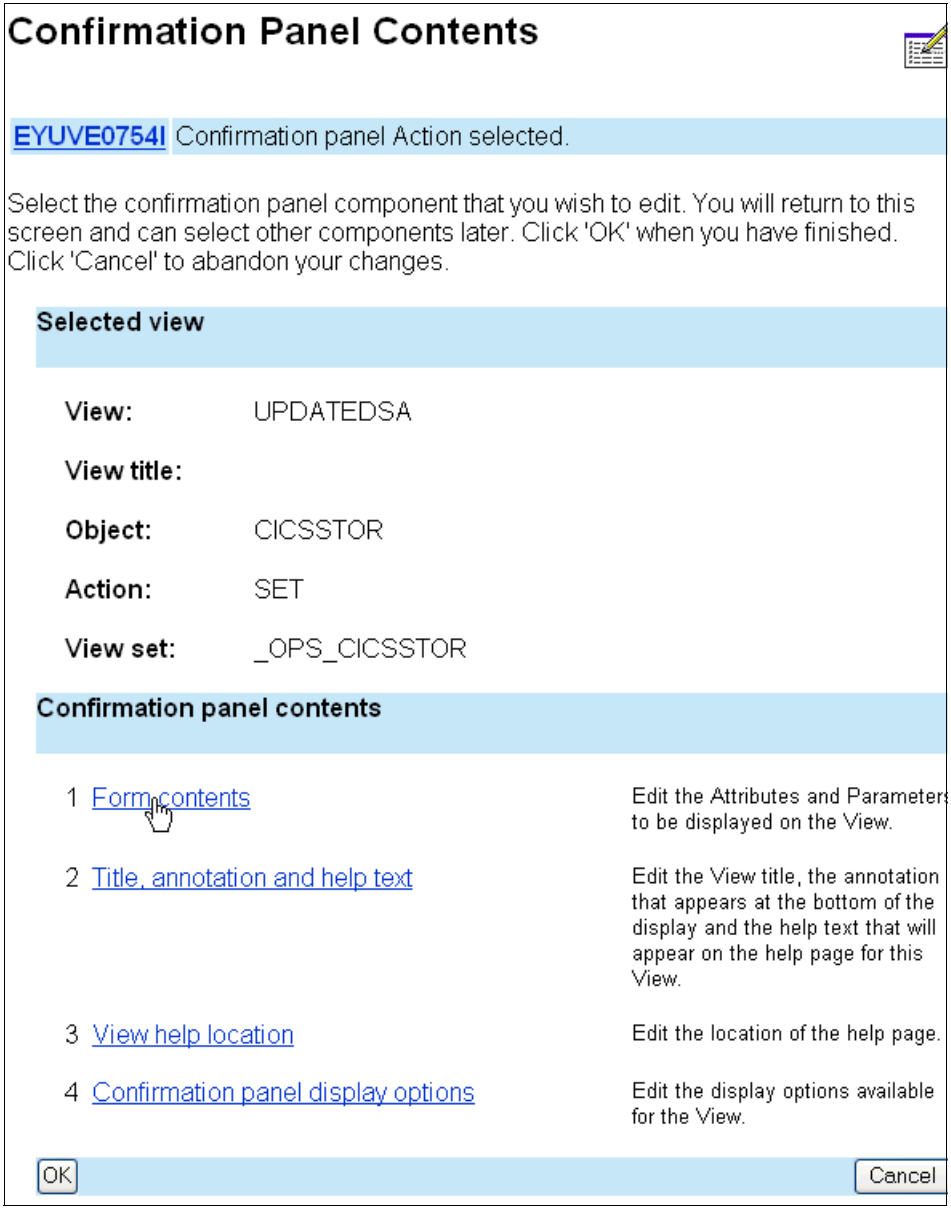


Figure 5-112 Confirmation Panel Contents window

5. In the Form Contents window click **Append** (Figure 5-113).

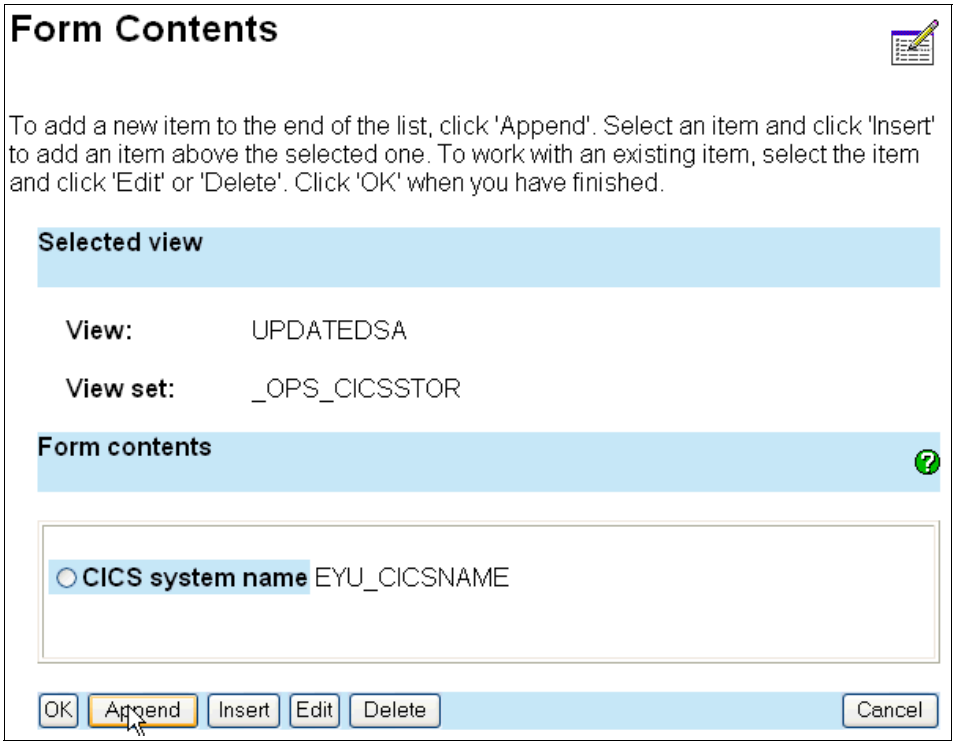


Figure 5-113 Form Contents (reprise)

6. On the Form Item Type screen choose **Attribute field** and click **OK**.

7. In the Form Attribute Field window, choose **SMSSOSSTATUS (Short on storage status)** from the Attribute list box (Figure 5-114) and click **OK** to continue.

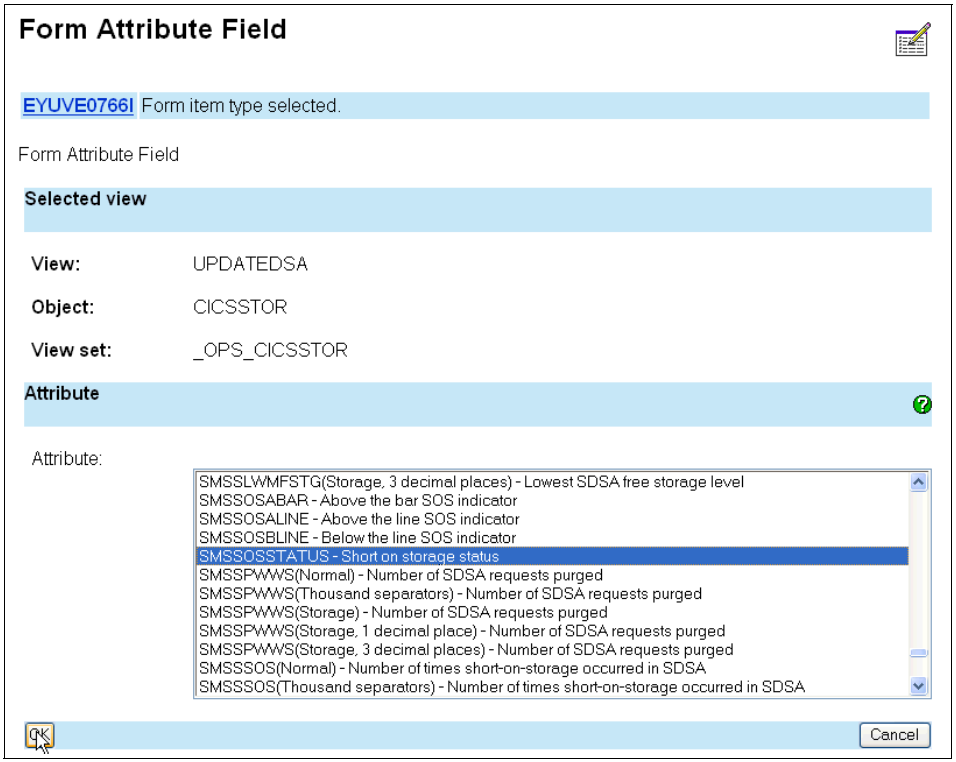


Figure 5-114 Form Attribute Field (reprise)

8. Click the **Form item display options** link (Figure 5-115).

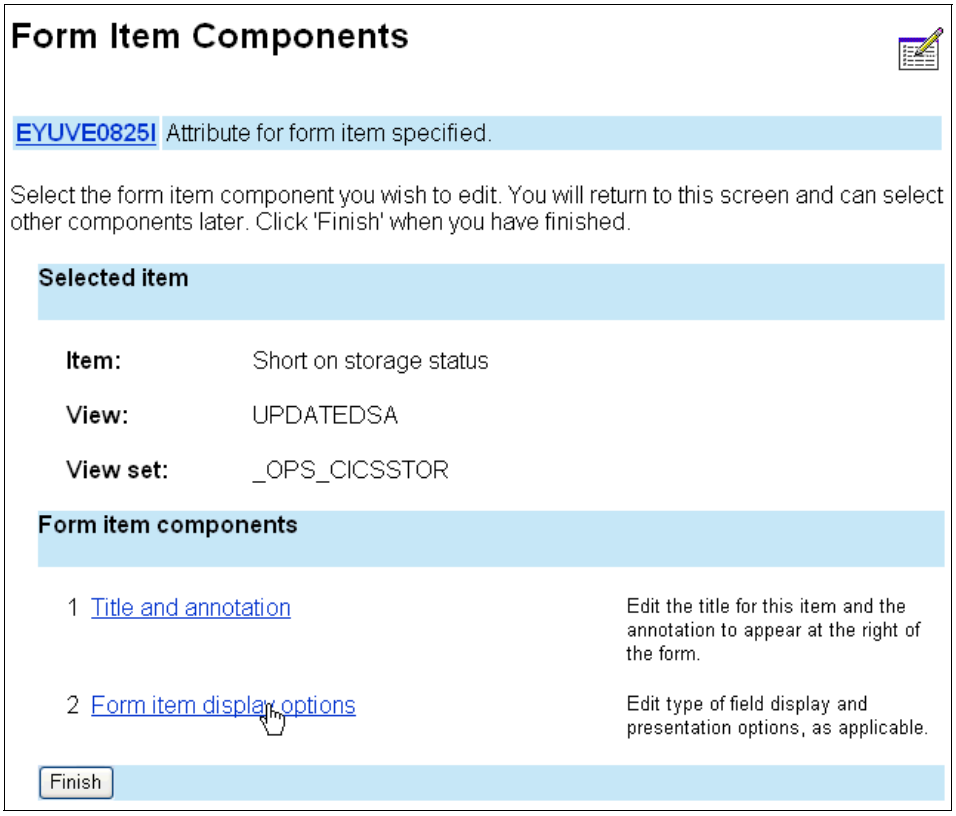


Figure 5-115 Form Item Components window (reprise)

Note: Additional options may be displayed, depending on the attribute.

9. Choose **Normal** and click **OK** (Figure 5-116) to return to the Form Item Components window.

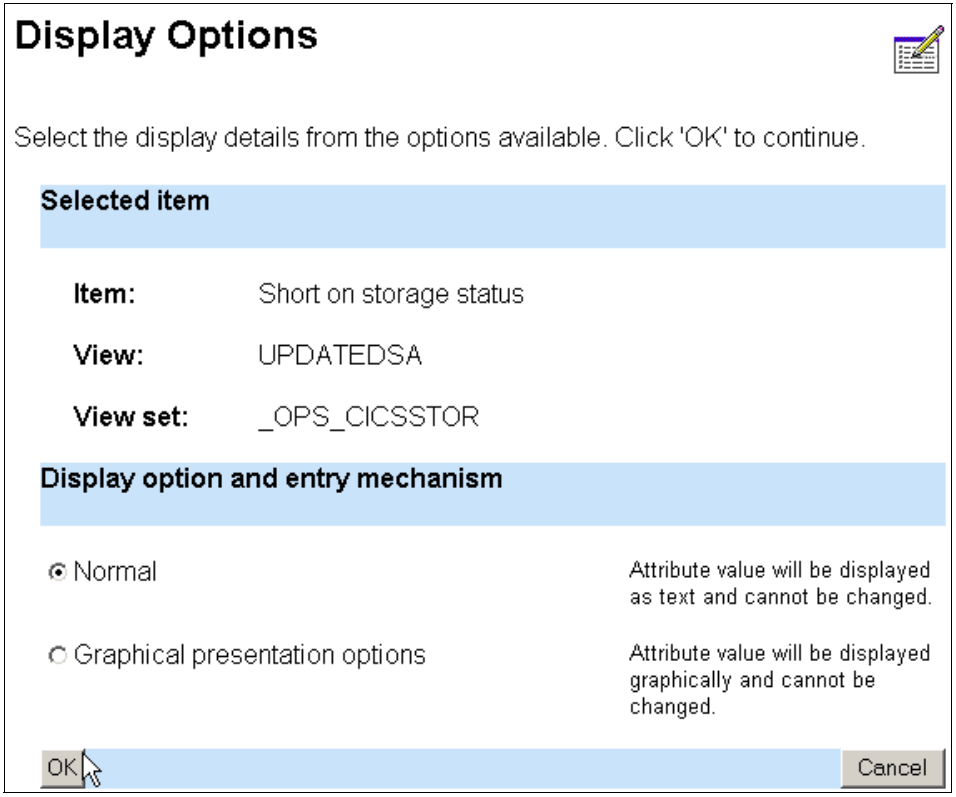


Figure 5-116 Display Options window (reprise)

10. In the Form Item Components window (Figure 5-115 on page 301), click **Finish** to return to the Form Contents window.
11. Add additional rows to the confirmation panel by repeating steps 5 on page 299 through 10 for each row and entering the appropriate attributes:
    - Form item type = White space
    - Form item type = Static text, Title = DSA storage information
    - Form item type = Attribute field, Attribute = SMSDSATOTAL(Storage), Display option = Normal
    - Form item type = Attribute field, Attribute = SMSDSALIMIT(Storage), Display option = Entry field
    - Form item type = White space
    - Form item type = Static text, Title = EDSA storage information

- Form item type = Attribute field, Attribute = SMSEDSATOTAL(Storage), Display option = Normal
- Form item type = Attribute field, Attribute = SMSEDSALIMIT(Storage), Display option = Entry field

12. After defining all fields, click **OK** in the Form Contents window (Figure 5-117).

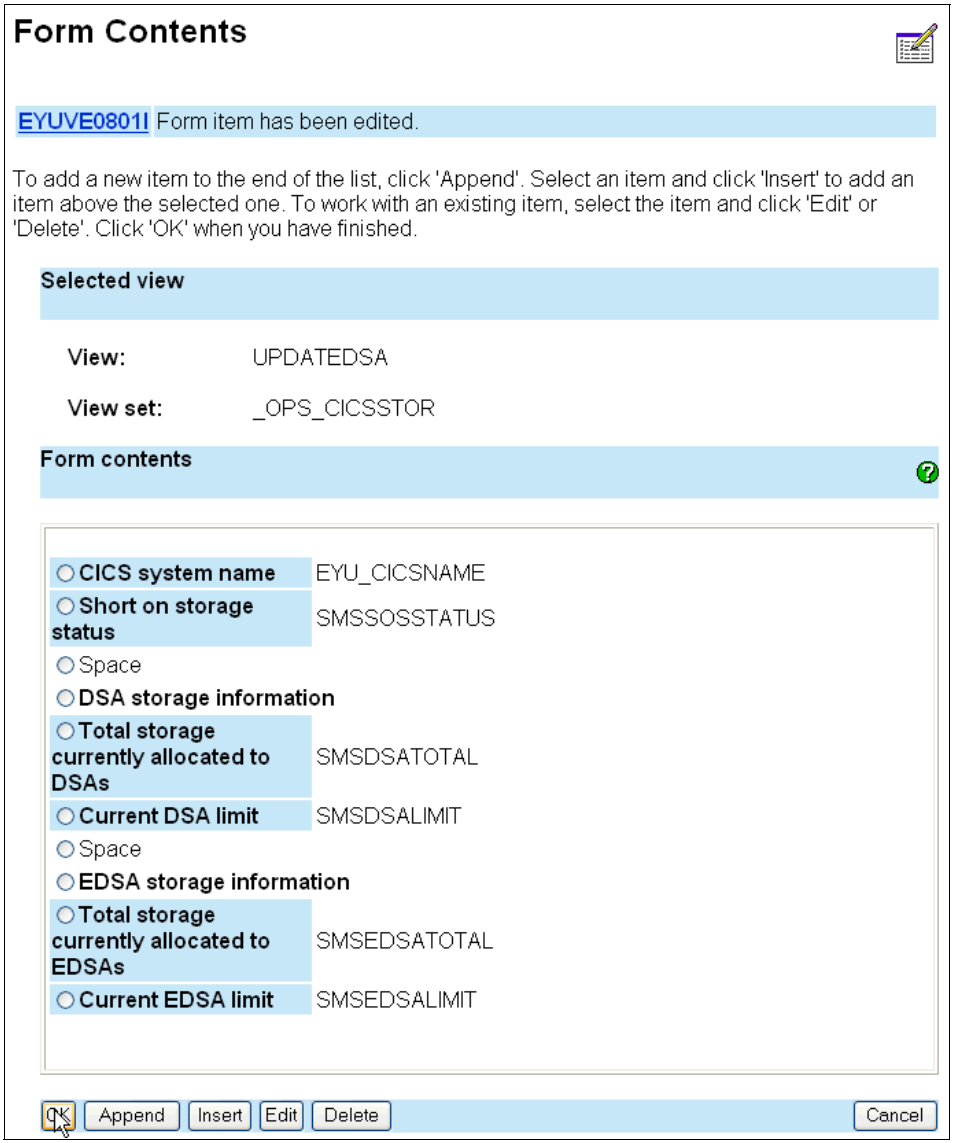


Figure 5-117 Form Contents window (reprise)

13. In the Confirmation Panel Contents window (Figure 5-112 on page 298) click the **Title, annotation and help text** link.
14. In the View Title, Annotation and Help Text window, type `Update DSA Limits` in the Title edit box (Figure 5-118). Click **OK** to return to the Confirmation Panel Contents window.

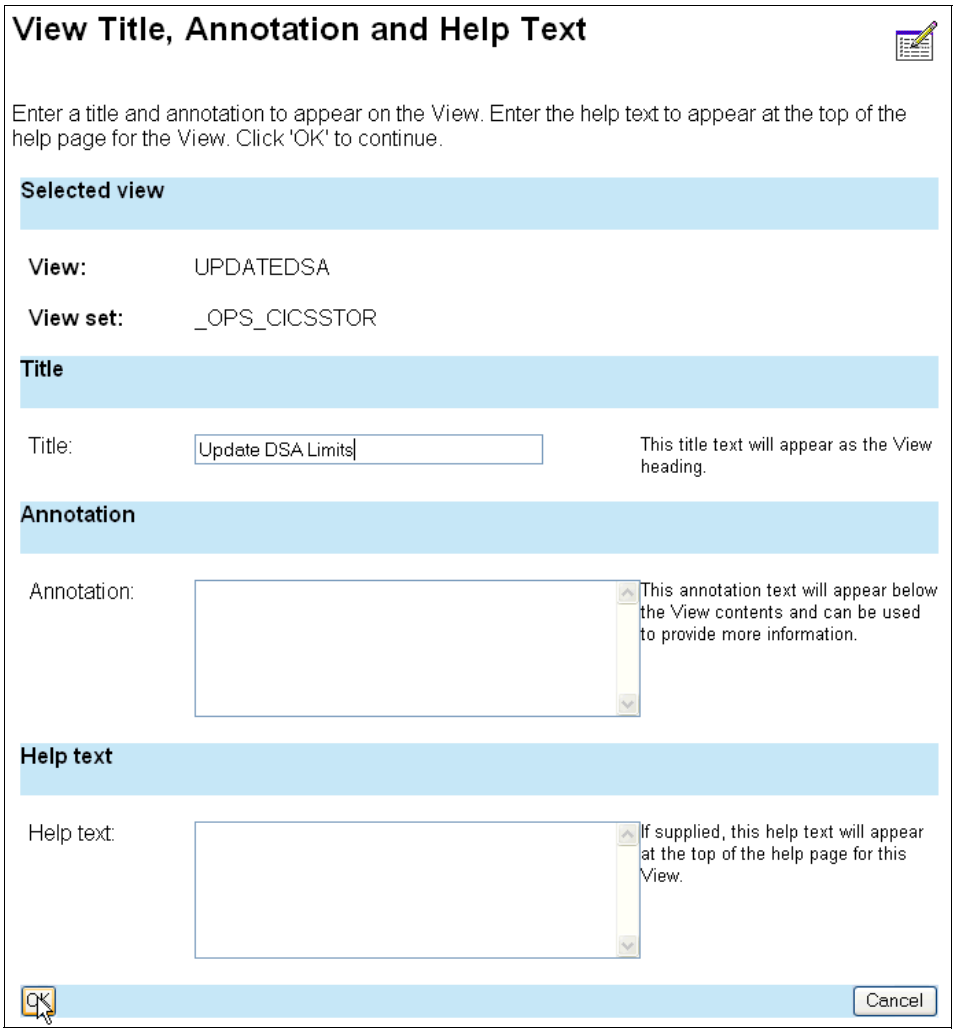


Figure 5-118 View Title, Annotation and Help Text window (reprise)

15. In the Confirmation Panel Contents window (Figure 5-112 on page 298) click the **Confirmation panel display options** link.

16. In the View Display Options window, click the **'Yes to all' button available** check box (Figure 5-119). This allows an operator to confirm the action for a group of resources with a single click. Click **OK** to return to the Confirmation Panel Contents window.

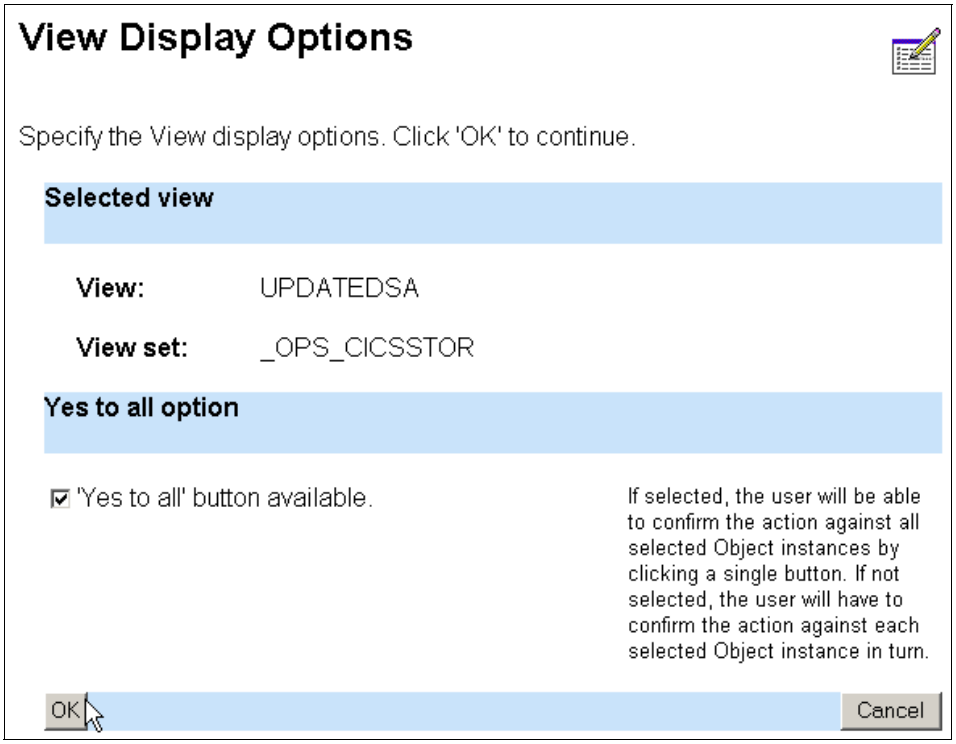


Figure 5-119 View Display Options window (reprise)

17. In the Confirmation Panel Contents window (Figure 5-112 on page 298) click **OK** to return to the View Set Contents window.

18. In the View Set Contents window click **Save** to save the view set in the WUI repository (Figure 5-120) and return to the View Set Editor window.

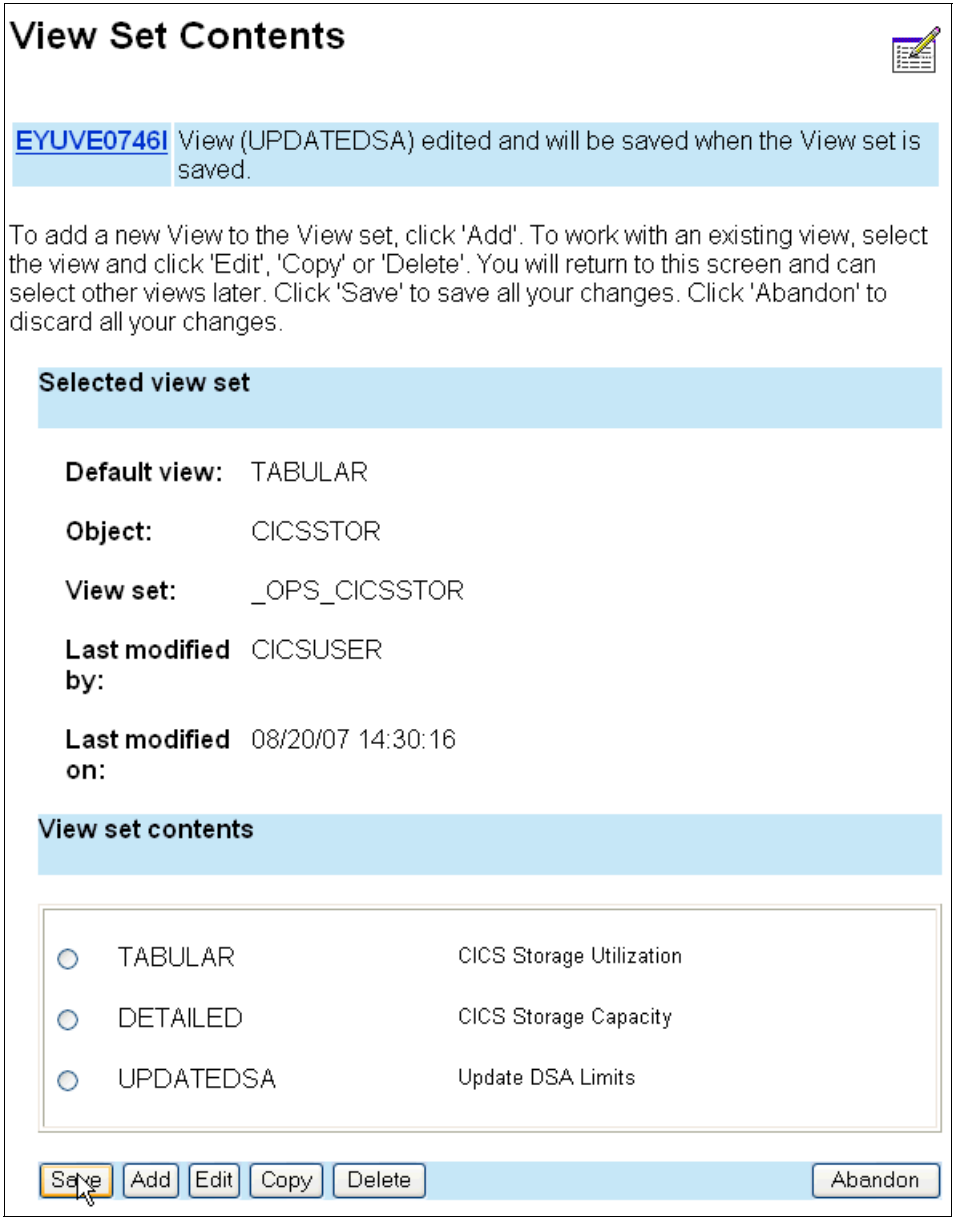


Figure 5-120 View Set Contents window (reprise)

19. In the View Set Editor window, click **Finish** to end the View Set Editor session (Figure 5-121).

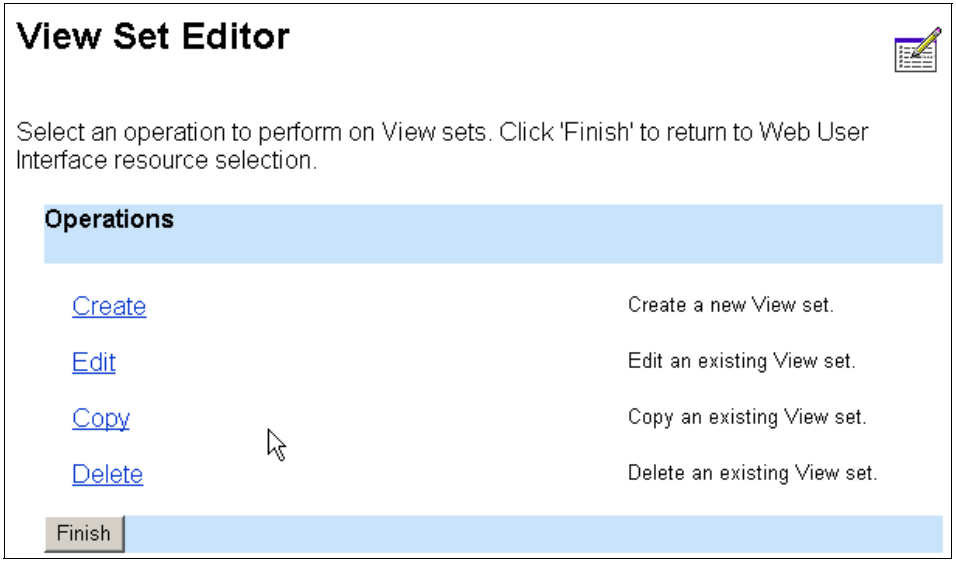


Figure 5-121 View Set Editor window (reprise)

6

Problem determination

In this chapter we discuss the use of the WUI for problem determination in a CICSplex. The customized screens from Chapter 5, “WUI view modification and customization” on page 177, could be used in finding and sometimes correcting problems with:

- Storage
- VSAM File control
- DB2
- Real Time Analysis

We also use the historical collection facility as an example of assisting us in post problem determination experienced in a CICSplex environment.

Note: These scenarios are designed to provide situations that allow us to demonstrate how the CICSPlex SM WUI can be used as a debug and repair tool. The CICS regions were not necessarily tuned, and in some cases regions were constrained in order to cause certain problems to occur. Therefore, these scenarios and the results provided should be seen as demonstrations only.

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6.1 Storage problems

We discuss the actions that can be taken through the WUI to alleviate a short-on-storage condition within one of the CICS regions in the CICSplex.

6.1.1 The scenario

A new application was added to the CICSplex, but no one was informed that the new application required a considerable amount of *above the line* storage. Users connected to the CICSplex start to complain that they are getting slow response times or their terminals are hanging.

Is there a real problem

By going into the home page of the WUI, you can verify that there is a problem by checking the ALERTS® panel (Figure 6-1).

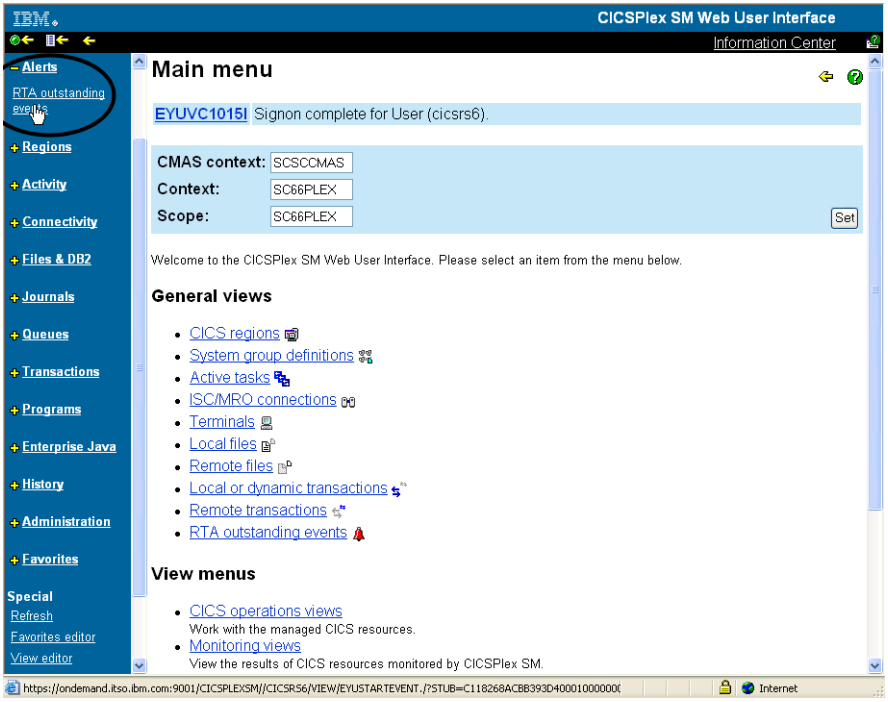


Figure 6-1 Use the Alerts toggle for the RTA alerts

Yes, you really have a problem

You find that indeed there is a problem with one of your AORs. The RTA Outstanding Events view indicates that the SCSCPAA1 CICS region is currently short on storage (SOS) (Figure 6-2).

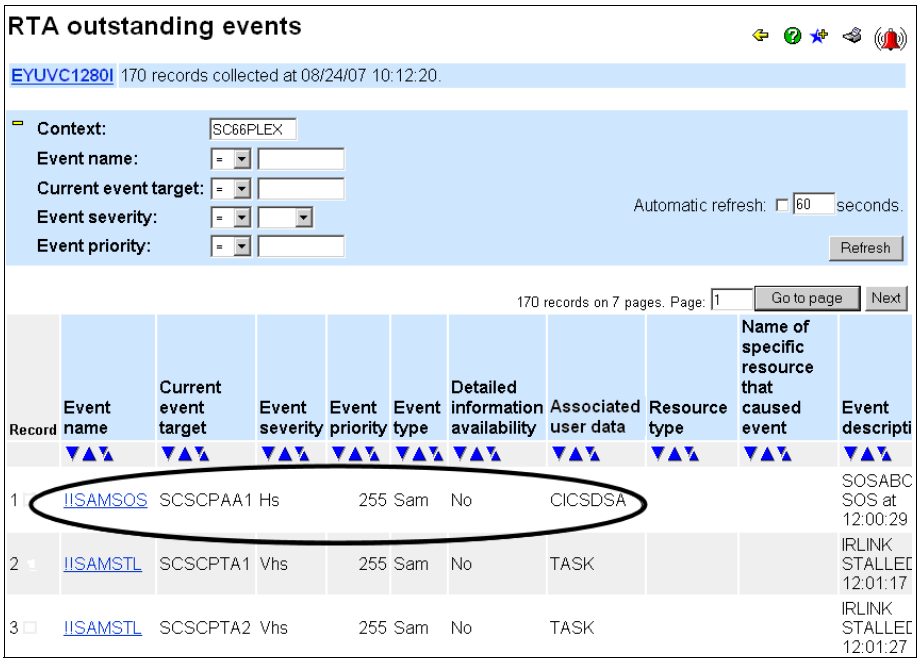


Figure 6-2 SAMSOS for CICS region SCSCPAA1

You can use the suggested CICSDSA view to gain more information, or you can use the viewset _OPS_CICSSTOR created in Chapter 5, “WUI view modification and customization” on page 177, to get more information. In any case, you need to alleviate the problem. Go into the created view set _OPS_CICSSTOR and click the hyperlink to the SCSCPAA1 region.

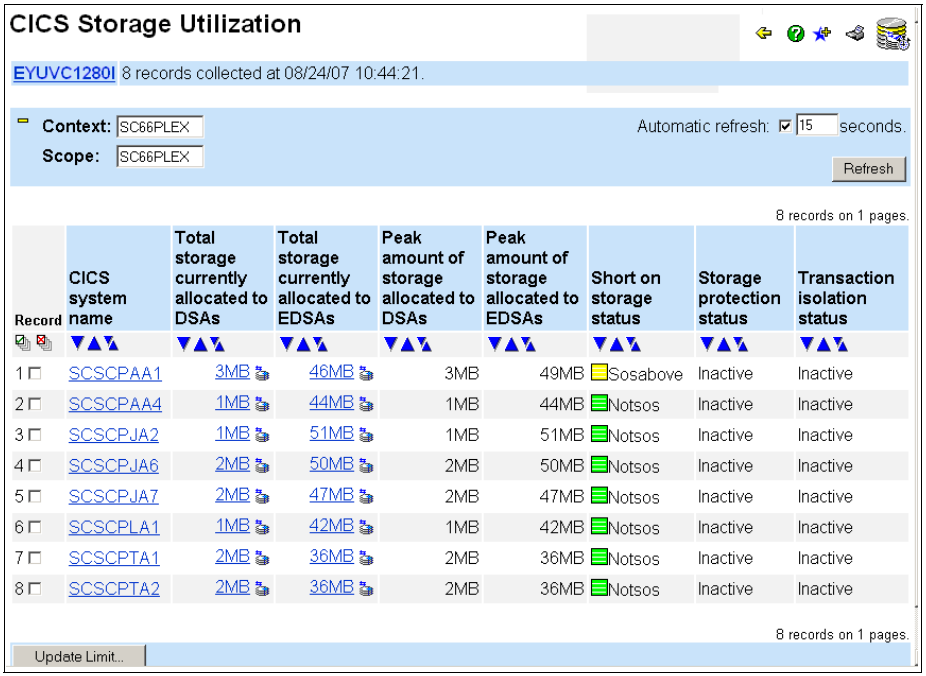
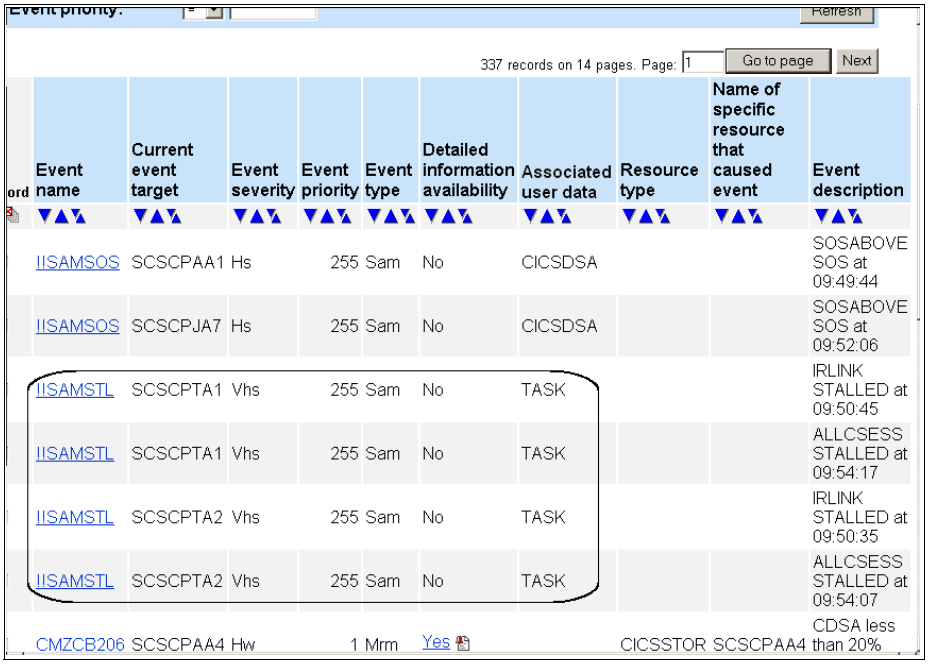


Figure 6-3 _OPS_CICSSTOR view is equipped with warning lights for SOS

The warning light at this time is still yellow. If this condition remains, requests for extended dynamic storage areas (EDSAs) could be resolved out of the DSA. When this occurs, you will have a full SOS condition and the warning light will turn red. The problem with the application begins to spread to other regions, as indicated by the refreshed alert screen in Figure 6-4.


Event priority: Refresh

337 records on 14 pages. Page: 1 Go to page Next

ord	Event name	Current event target	Event severity	Event priority	Event type	Detailed information availability	Associated user data	Resource type	Name of specific resource that caused event	Event description
	IISAMSOS	SCSCPAA1	Hs	255	Sam	No	CICSDSA			SOSABOVE SOS at 09:49:44
	IISAMSOS	SCSCPJA7	Hs	255	Sam	No	CICSDSA			SOSABOVE SOS at 09:52:06
	IISAMSTL	SCSCPTA1	Vhs	255	Sam	No	TASK			IRLINK STALLED at 09:50:45
	IISAMSTL	SCSCPTA1	Vhs	255	Sam	No	TASK			ALLCSESS STALLED at 09:54:17
	IISAMSTL	SCSCPTA2	Vhs	255	Sam	No	TASK			IRLINK STALLED at 09:50:35
	IISAMSTL	SCSCPTA2	Vhs	255	Sam	No	TASK			ALLCSESS STALLED at 09:54:07
	CMZCB206	SCSCPAA4	Hw	1	Mrm	Yes		CICSSTOR	SCSCPAA4	CDSA less than 20%

Figure 6-4 SCSCPTA1 and SCSCPAT2 failing with stall conditions

Returning to the _OPS_CICSSTOR custom view, confirm what the alert screen had indicated, that SCSCPJA7 is also short on storage. Click **SCSPAA1** so that you can alter the storage to keep the region active (Figure 6-5).

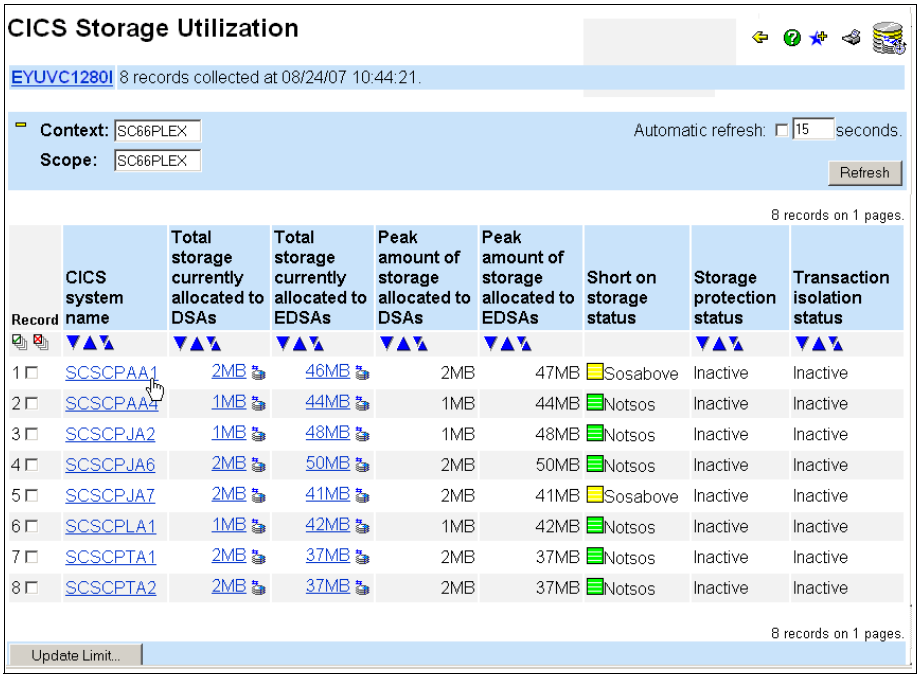


Figure 6-5 Hyperlink on the SCSCPAA1 region

The detailed view that is presented provides a quick and easy view of how the the EDSA and DSA storage is being used in SCSCPAA1. Make note in Figure 6-6 of the update fields and the total allocated storage for EDSA.

Let us fix the problem

Ensure that the check boxes are marked before changing the EDSA limit.

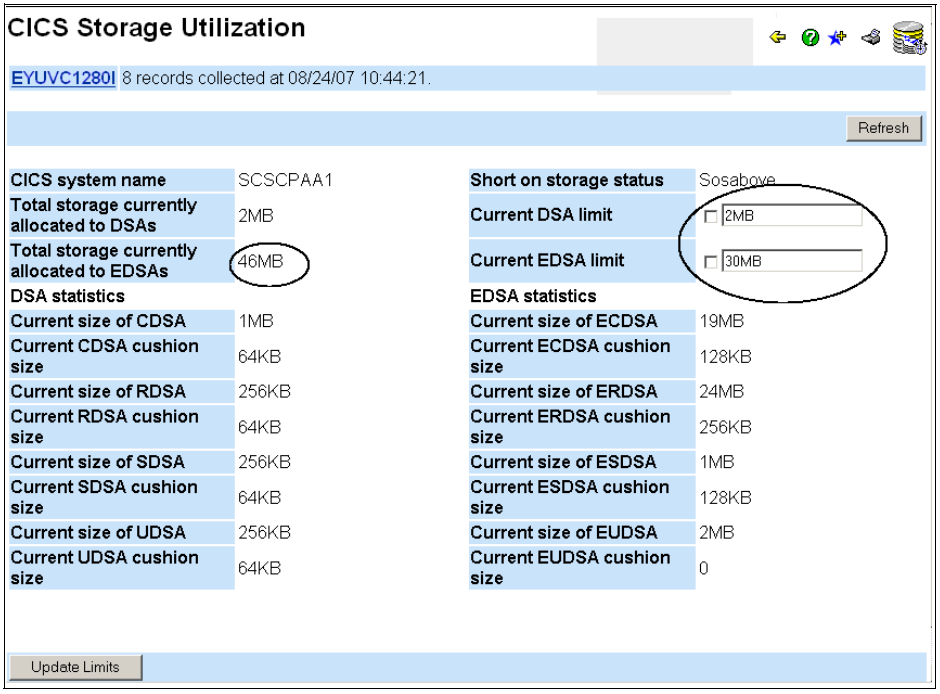


Figure 6-6 CICS Storage Capacity window

In this case you do not know how extensive the storage usage will be, as long as you have enough storage available the best option is to double the EDSA limit. Update the current EDSA limit to 60 MB, check the box, then click the **Update Limits** button, as in Figure 6-7.

Note: The autocheck uses JavaScript™, so changing it automatically checks the tick box when you click something else including the button. You only need to select it if you do not have JavaScript in the browser, or can uncheck it if you decide that you do not want to change it after all.

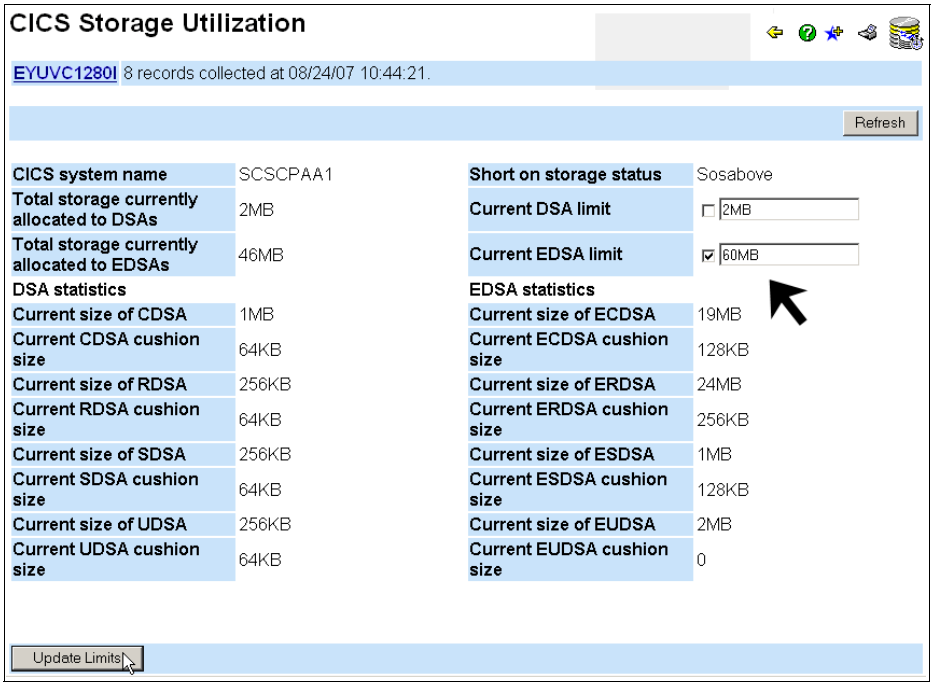
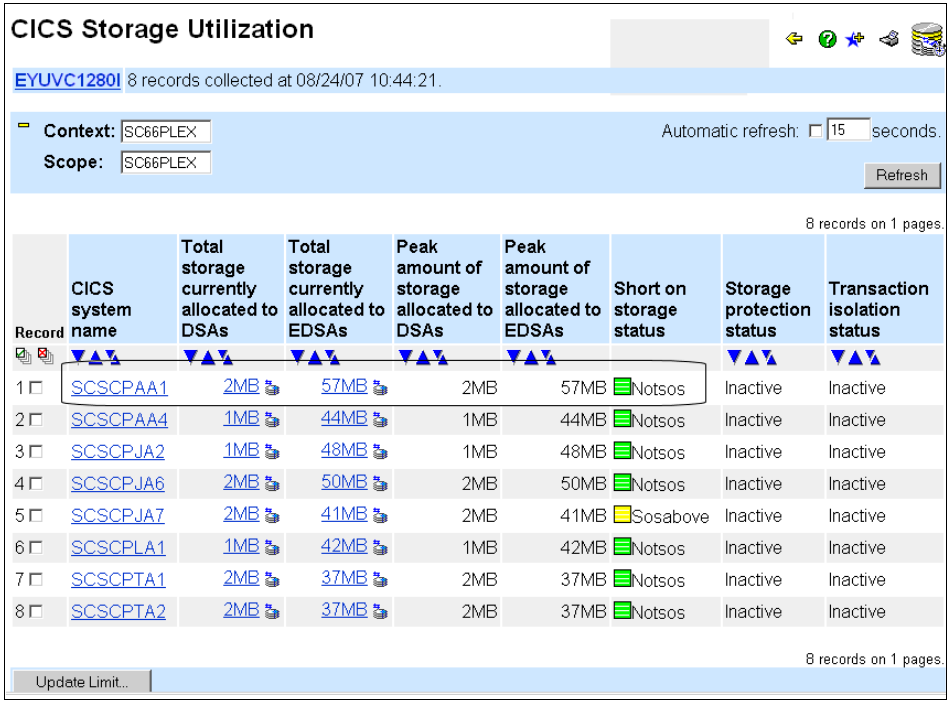


Figure 6-7 CICS Storage Capacity window with updated EDSA limit

Returning to the CICS Storage Utilization window, you can now verify that your SOS condition for SCSCPAA1 has been alleviated (Figure 6-8).



CICS Storage Utilization

EYUVC1280I 8 records collected at 08/24/07 10:44:21.

Context: SC66PLEX
Scope: SC66PLEX
Automatic refresh: 15 seconds.
Refresh

8 records on 1 pages.

Record	CICS system name	Total storage currently allocated to DSAs	Total storage currently allocated to EDSAs	Peak amount of storage allocated to DSAs	Peak amount of storage allocated to EDSAs	Short on storage status	Storage protection status	Transaction isolation status
1	SCSCPAA1	2MB	57MB	2MB	57MB	Notsos	Inactive	Inactive
2	SCSCPAA4	1MB	44MB	1MB	44MB	Notsos	Inactive	Inactive
3	SCSCPJA2	1MB	48MB	1MB	48MB	Notsos	Inactive	Inactive
4	SCSCPJA6	2MB	50MB	2MB	50MB	Notsos	Inactive	Inactive
5	SCSCPJA7	2MB	41MB	2MB	41MB	Sosabove	Inactive	Inactive
6	SCSCPLA1	1MB	42MB	1MB	42MB	Notsos	Inactive	Inactive
7	SCSCPTA1	2MB	37MB	2MB	37MB	Notsos	Inactive	Inactive
8	SCSCPTA2	2MB	37MB	2MB	37MB	Notsos	Inactive	Inactive

8 records on 1 pages.

Update Limit...

Figure 6-8 CICS storage utilization showing SOS condition no longer occurring

You could now repeat the steps that you carried out for SCSCPAA1 for SCSCPJA7. After you adjust the storage for SCSCPJA7, you can verify that all is well by checking real-time analysis (RTA) outstanding events window (Figure 6-9).

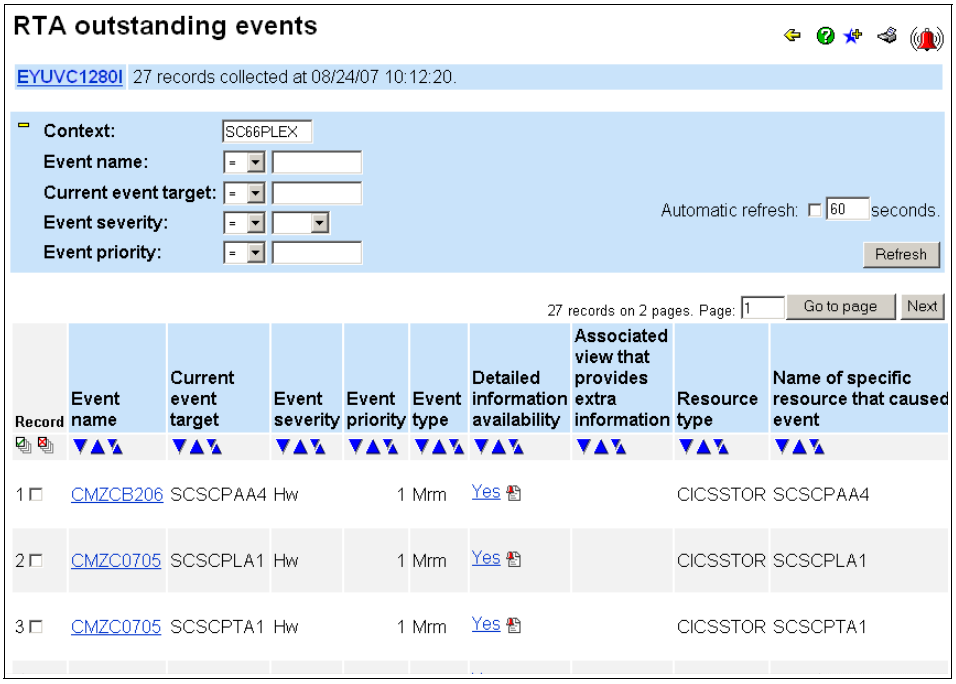


Figure 6-9 RTA outstanding events

The view indicates that there are not any SAMSOS events.

Conclusion

This was a contrived event. Normally, you would continue your investigation to find why the new application needed so much storage. You may find that your CICS needs to have its storage parameters altered.

6.2 VSAM file control problems

In this scenario we made use of a number of predefined scripts, previously generated for other testing purposes, running various VSAM workloads. We deliberately used high transaction volumes and made no attempt to tune or balance the workloads.

We used an MRO setup running a TPNS-generated workload through two TORs to a single file-owning AOR for LSR VSAM access. The scenarios were very similar to those used in the CICS Tools book *IBM Tools: CICS Performance Analyzer V1.2,* SG24-6882. We increased the workloads, however, and inappropriately mixed workload types.

Note: These scenarios were used to provide situations that would allow us to demonstrate the use that could be made of CICSPlex SM WUI. The CICS regions were not tuned for performance, and in some cases had a high level of tracing active. Furthermore, we deliberately contrived problem situations. Therefore, these scenarios and the results provided should be seen as demonstrations only, and do not provide definitive results for a customer environment.

6.2.1 VSAM LSR high-volume scenario

The workload being generated consisted of a mix of 3270 VSAM business applications running at high volumes from 300 TPNS terminals. The terminal workload was being managed through two TORs using VTAM generic resources, so balancing the workload, but both routing to a single AOR that was running the applications and owning the files. Eighteen VSAM files were being accessed in the applications, with various predefined LSR settings. The CICSplex setup, as it affected our scenario, is shown in Figure 6-10.

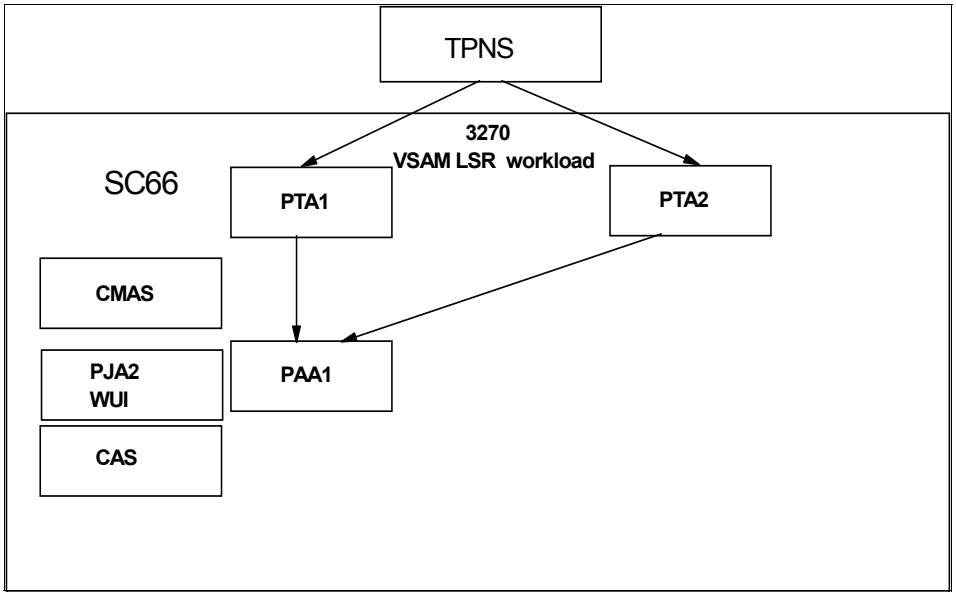


Figure 6-10 The CICSplex workload configuration for this scenario

As in the storage problem above, you have come in on Monday morning to find that an application was modified over the weekend, by importing the *QA* version, into the *production* environment (you have a quality CICSplex and a separate production CICSplex environment). The telephone is ringing because users cannot get their work done due to hanging terminals and transactions.

You log onto the WUI and use the _OPS_MENU built in Chapter 5, “WUI view modification and customization” on page 177. Go to the Problem Determination header and click **Suspended Application Tasks**.

Is there a real problem

This view provides all of the suspended tasks in the SC66PLEX. The first indication is that there is a problem in the SCSCPAA1 region with file control. By clicking the **Automatic Refresh** box, you allow for a couple of 15-second cycles to occur. This ensures that you are looking at the problem, and not just a snap shot of the existing CICSplex.

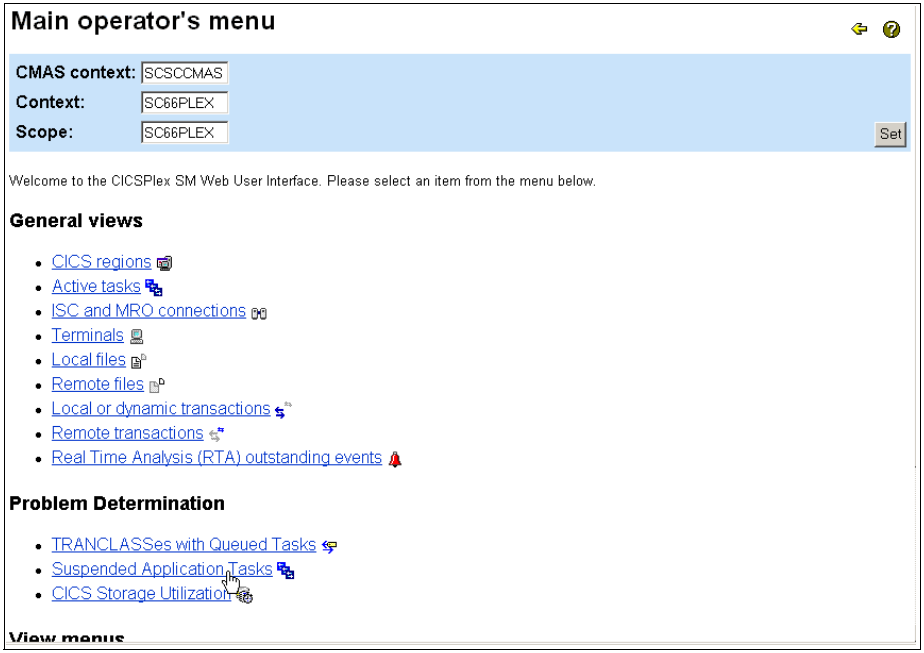


Figure 6-11 Main operator’s menu, linking on the suspended application tasks

Turn off the Automatic Refresh, and get one last snap shot of the system. There is a lot of information that you can glean from Figure 6-12.

- The scope is set to the CICSplex SC66PLEX.
- There are a lot of records being returned over a lot of pages.
- There seems to be a file control problem in SCSCPAA1. Lots of FC suspend reasons gives the clue to this.

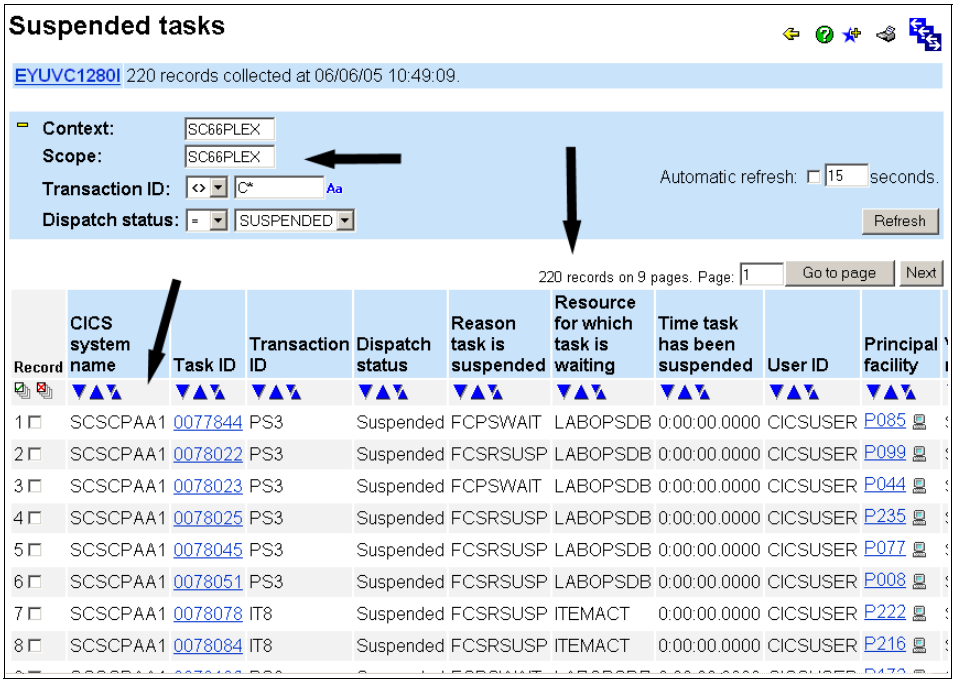


Figure 6-12 Suspended tasks view with the scope set to the CICSplex

The current scope returns data for the entire CICSplex. As the problem is only occurring in SCSCPAA1, it would be useful to restrict the data returned to just the system we are interested in. We can reduce the data returned by changing the scope to SCSCPAA1. Refer to Figure 6-13.

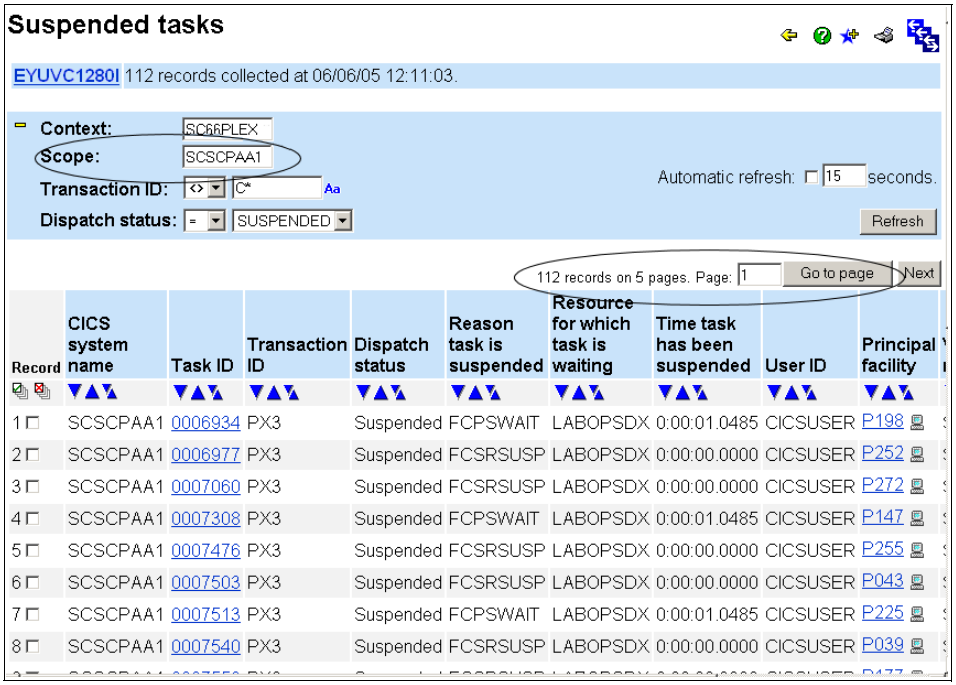


Figure 6-13 Suspended tasks view with the modified scope

Yes, you really have a problem

The total number of records being returned is still very high. Changing the scope to other regions verifies that this is the region that is holding up resources. You check the RTA Alerts screen and find that SCSCPAA1 is at Maxtask (Figure 6-14).

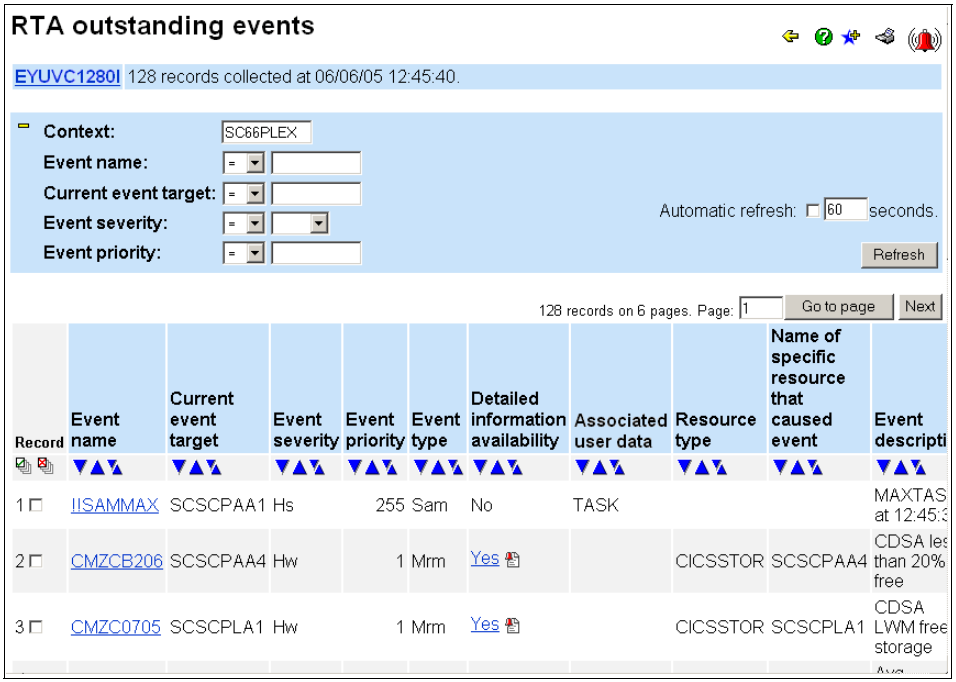


Figure 6-14 RTA Outstanding Events view, with SCSCPAA1 at Max Task

Let us fix the problem

By going back to the Suspended tasks view, note that most of the suspends are due to file control strings. They are either the local shared resource (LSR) string waits or file string waits. The Reason the task is suspended column is the same. FCSRSUSP indicates that the wait is for a shared resource string. The “Resource for which task is waiting” shows that there are different files involved in the problem (Figure 6-15).

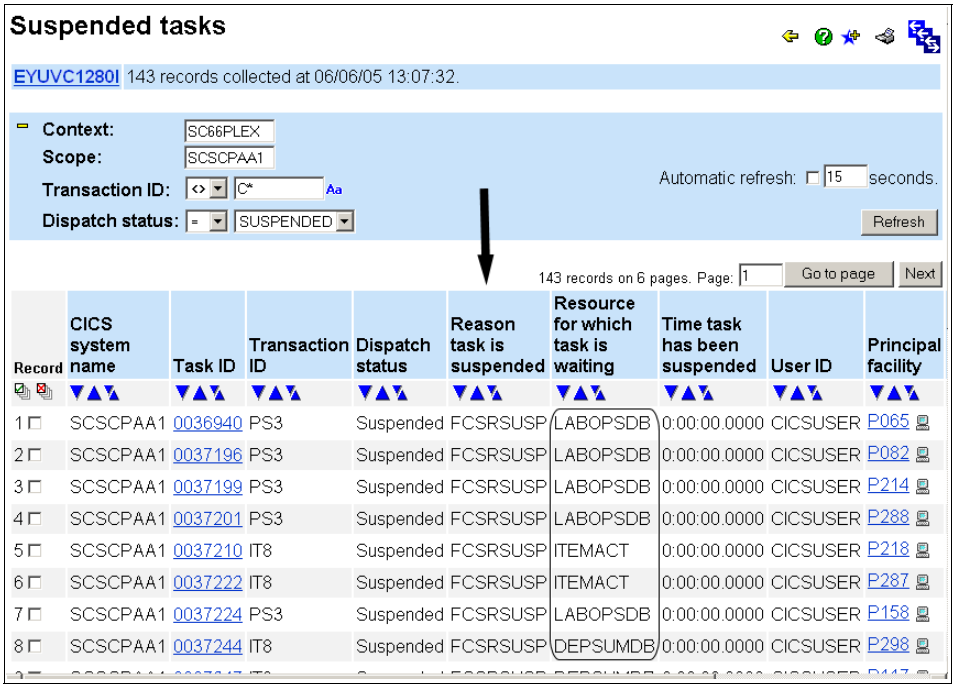
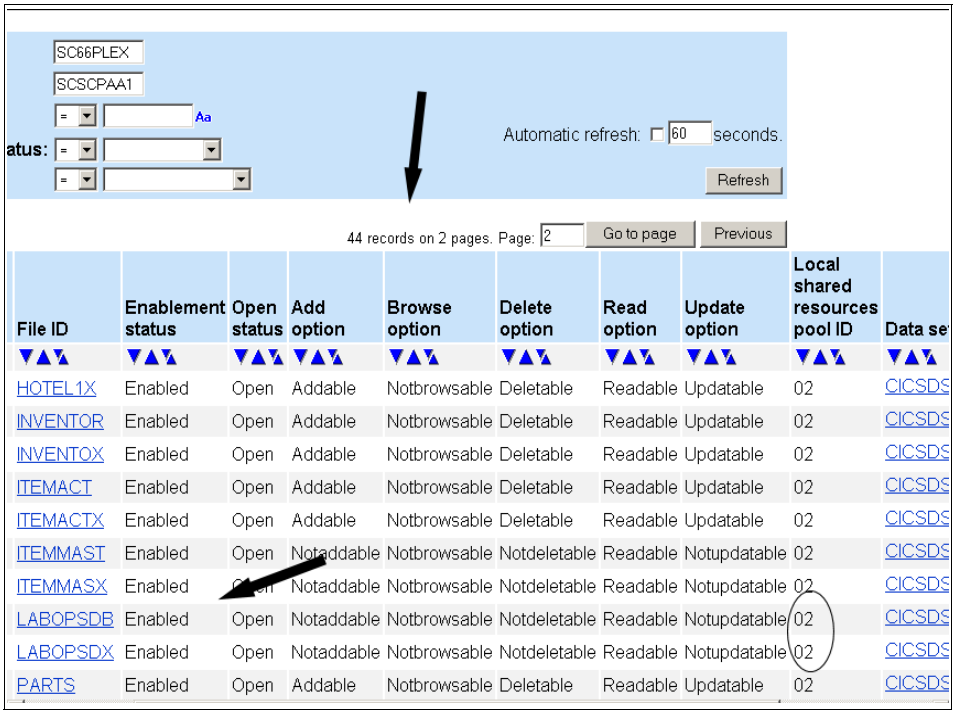


Figure 6-15 Suspended tasks with same suspend reason, but different resources

It appears that LABOPSDB has more tasks waiting than the other files. You need to find out which LSR pool this file uses. Go to the **Files & DB2**; toggle in the navigation frame and click **local files**.

The local files view resource table with the scope set to SCSCPAA1 is returned. Go to the next page and you will find our problem file, LABOPSDB. Note that the Local shared resource pool ID is 02. There are 44 files defined to SCSCPAA1, and it appears that most of the files are using LSR pool 02. Refer to Figure 6-16.



File ID	Enablement status	Open status	Add option	Browse option	Delete option	Read option	Update option	Local shared resources pool ID	Data se
HOTEL1X	Enabled	Open	Addable	Notbrowsable	Deletable	Readable	Updatable	02	CICSDS
INVENTOR	Enabled	Open	Addable	Notbrowsable	Deletable	Readable	Updatable	02	CICSDS
INVENTOX	Enabled	Open	Addable	Notbrowsable	Deletable	Readable	Updatable	02	CICSDS
ITEMACT	Enabled	Open	Addable	Notbrowsable	Deletable	Readable	Updatable	02	CICSDS
ITEMACTX	Enabled	Open	Addable	Notbrowsable	Deletable	Readable	Updatable	02	CICSDS
ITEMMAST	Enabled	Open	Notaddable	Notbrowsable	Notdeletable	Readable	Notupdatable	02	CICSDS
ITEMMASX	Enabled	Open	Notaddable	Notbrowsable	Notdeletable	Readable	Notupdatable	02	CICSDS
LABOPSDB	Enabled	Open	Notaddable	Notbrowsable	Notdeletable	Readable	Notupdatable	02	CICSDS
LABOPSDX	Enabled	Open	Notaddable	Notbrowsable	Notdeletable	Readable	Notupdatable	02	CICSDS
PARTS	Enabled	Open	Addable	Notbrowsable	Deletable	Readable	Updatable	02	CICSDS

Figure 6-16 Local file view for SCSCPAA1, second page

Note: Sometimes data requests can result in many lines of information, possibly spreading over a number of display pages. The amount of data displayed can be summarized using any field that has been defined as a summarizing field. Summarizing fields are defined when the view is created using the view editor.

A summarized view is a special form of the tabular view, comprising one line for each discrete value in the result set.

The Record count column on the summary view indicates the number of records from the preceding tabular view combined to form the line of summarized information.

A row in a summarized view can be expanded to show each resource related to the row by clicking the hyperlink in the Record count column.

Go to the navigation frame and click **VSAM LSR pools** under the File & DB2 toggle. You notice that there are only two strings defined for LSR pool 02 and that there have been almost 500,000 string waits.

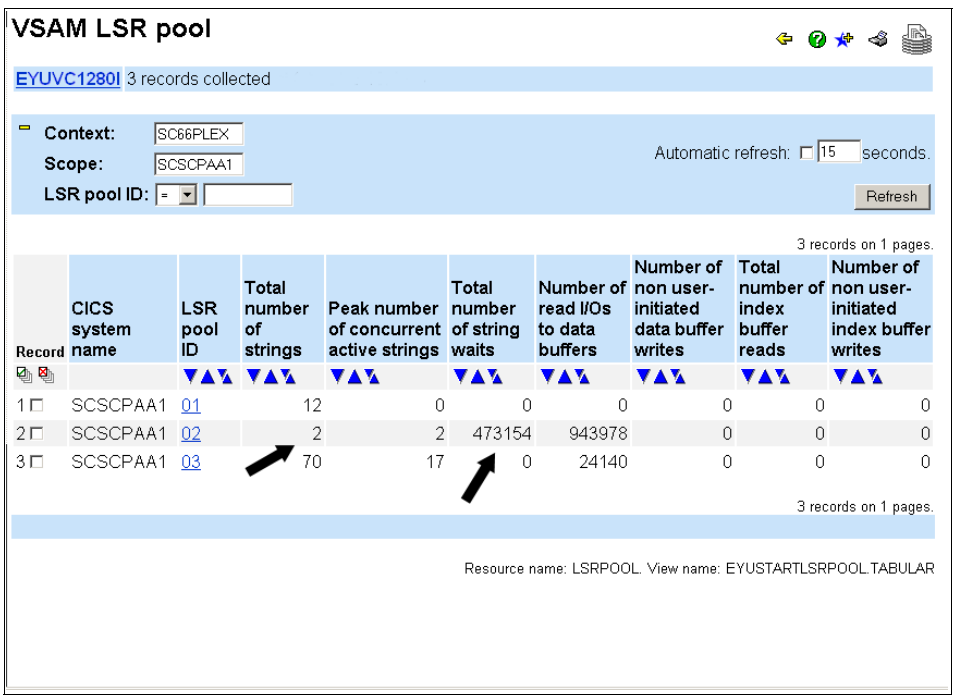


Figure 6-17 VSAM LSR pool view

As part of your investigation you have found that there were 12 files moved with the application to the *production* CICSplex. There were no changes made to the file definitions. You also found that LSR pool 02 in the *QA* CICSplex had 70 strings defined with 200 4K buffers and 100 2K buffers.

In order to get out of this problem, you need to:

1. Define a new LSR pool in the *production* CICSplex that has the same attributes of LSR pool 02 in the *QA* CICSplex.
2. Install the definition in SCSCPAA1.
3. Close the 12 files that were moved with the application.
4. Change the LSR pool parameter in the file definitions to the new one just created.
5. Reopen the files.

Defining the LSR pool

Using the navigation frame, toggle open the Administration views and hyperlink to Basic CICS resources.

Figure 6-18 Use the Administration functions to build resources

Once you are in the Basic CICS resource administration view, you need to go to the definitions and click **CICS resource definitions**. At this point, you want to get the definition for the LSR pool built as soon as possible. You can come back at a later time and build the associations with the new LSR pool. Refer to Figure 6-19.

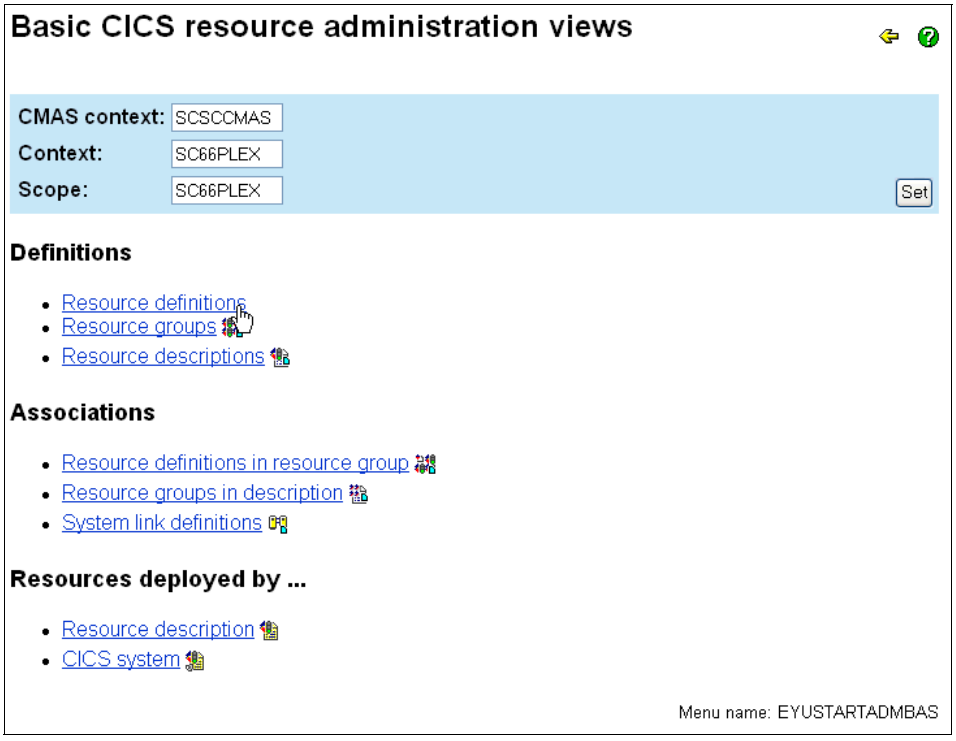


Figure 6-19 Basic CICS resource administration views

Note that you have not changed the context and scope at this point. This is a Business Application Support (BAS) definition that is defining this LSR pool to the CICSplex SC66PLEX.

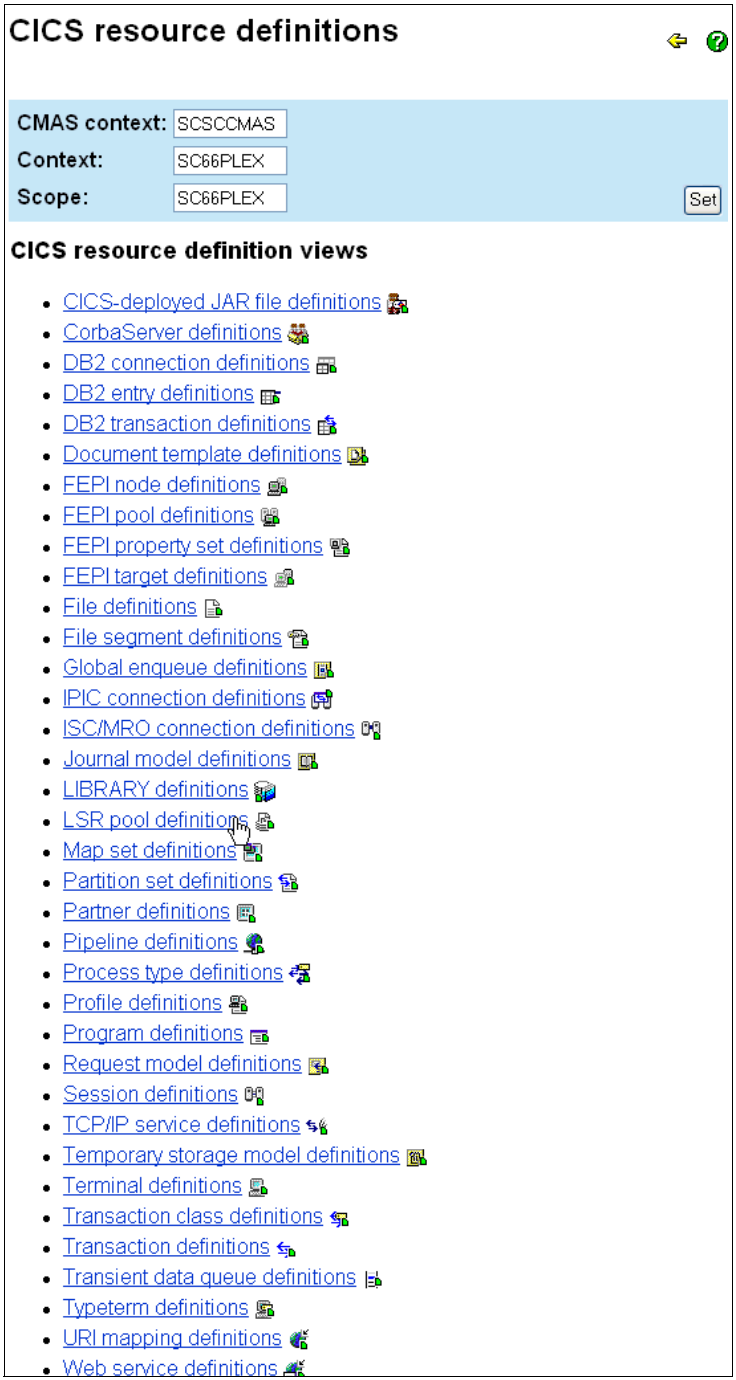


Figure 6-20 The complete list of CICS resources available for defining

Click the LSR pool definitions and you see that there are none. This is the first LSR pool created under BAS. The LSR pools being used by SCSCPAA1 were defined using the CICS CEDA transaction (CICS Resource Definition Online).

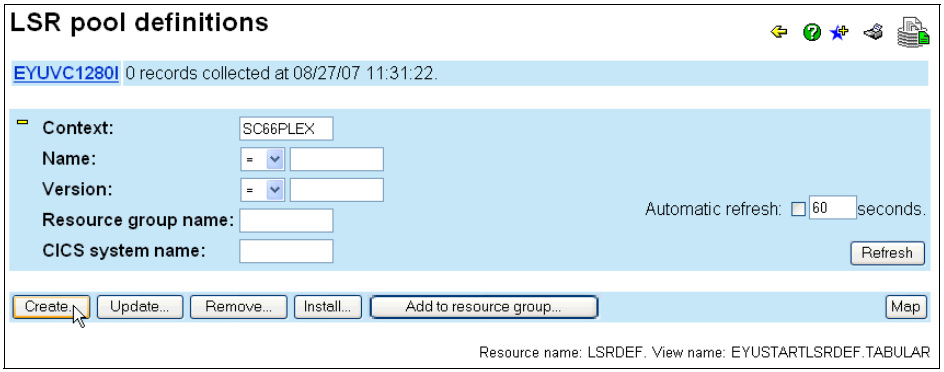


Figure 6-21 LSR pool definition view

Use the **Create** button to start the process, which gives you the view in Figure 6-22 on page 332. The fields with a blue check mark are required fields. The *definition version* is already filled in with a zero. You need to add the definition name. You want to ensure that the LSR pool ID does not already exist. Allow the resource share limit to default to 50.

You want to make this LSR pool mirror the LSR pool 02 in the *QA* CICSplex. You fill in 70 strings, with 100 2K buffers and 200 4K buffers (Figure 6-22). These are the minimum requirements.

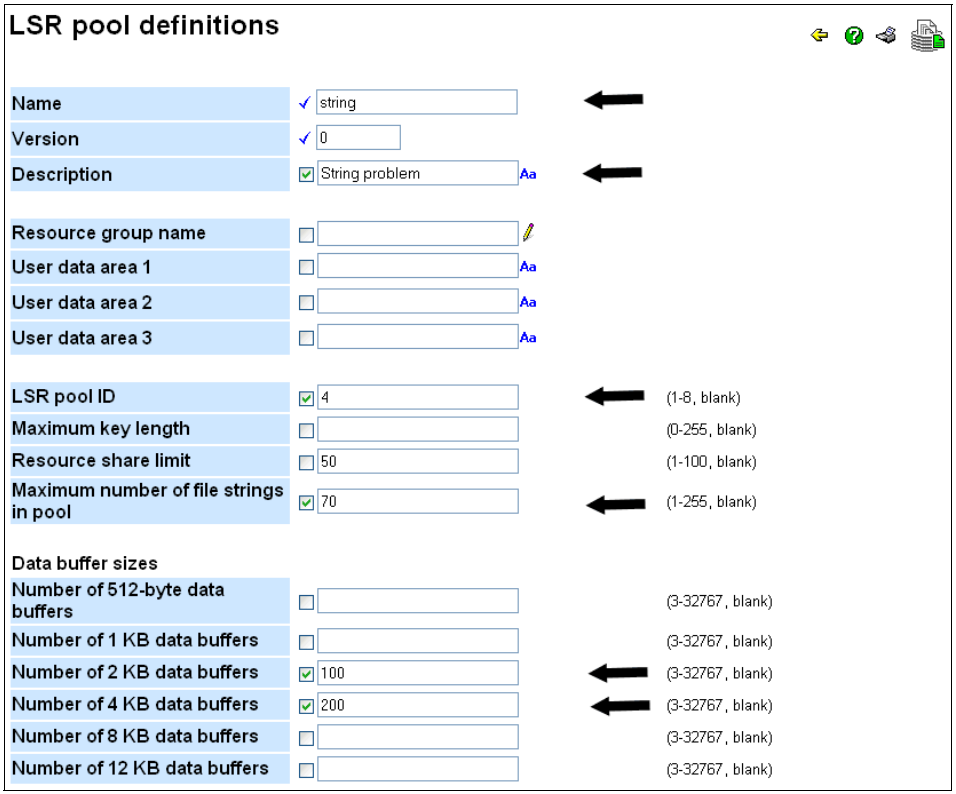


Figure 6-22 LSR pool definition view

You do not need to define index buffers, or Hiperspace™ buffers, just scroll to the bottom of the view and click the **Yes** button. See Figure 6-23.

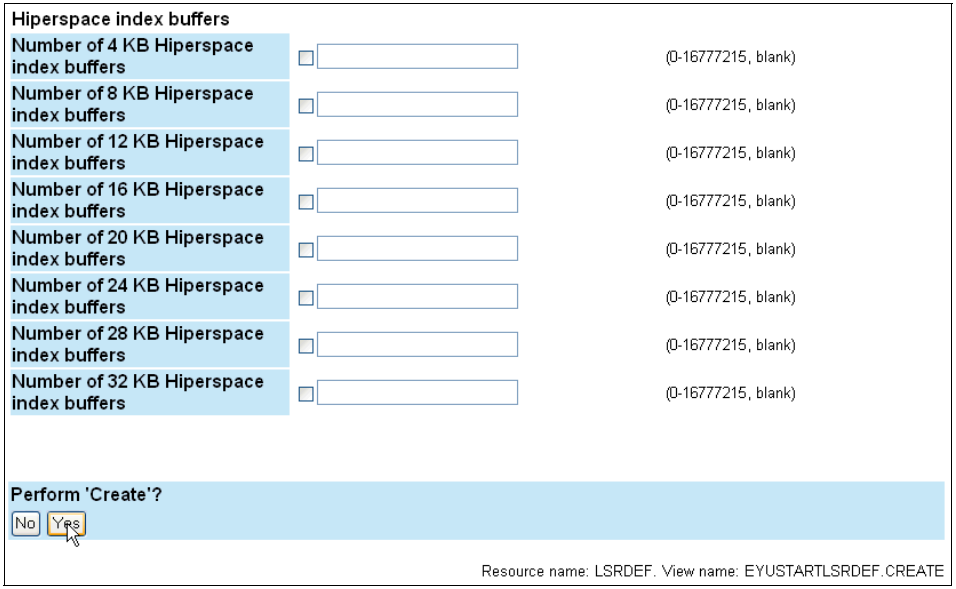


Figure 6-23 Bottom of the LSR pool definition view

Install the LSR pool definition

This brings you back to the LSR pool definition view, but now you have one record, the LSR pool that you have just created. You install this definition by checking the box, before clicking the **Install** button, after checking the box beside 1. See Figure 6-24.

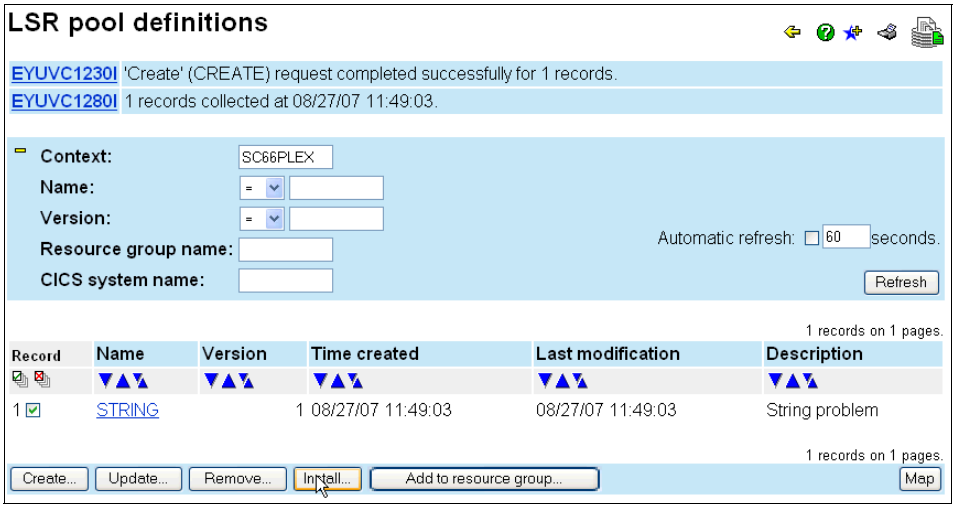


Figure 6-24 LSR pool definition Install

Fill in the appropriate target scope value in the Install view and click the **Yes** button. See Figure 6-25.

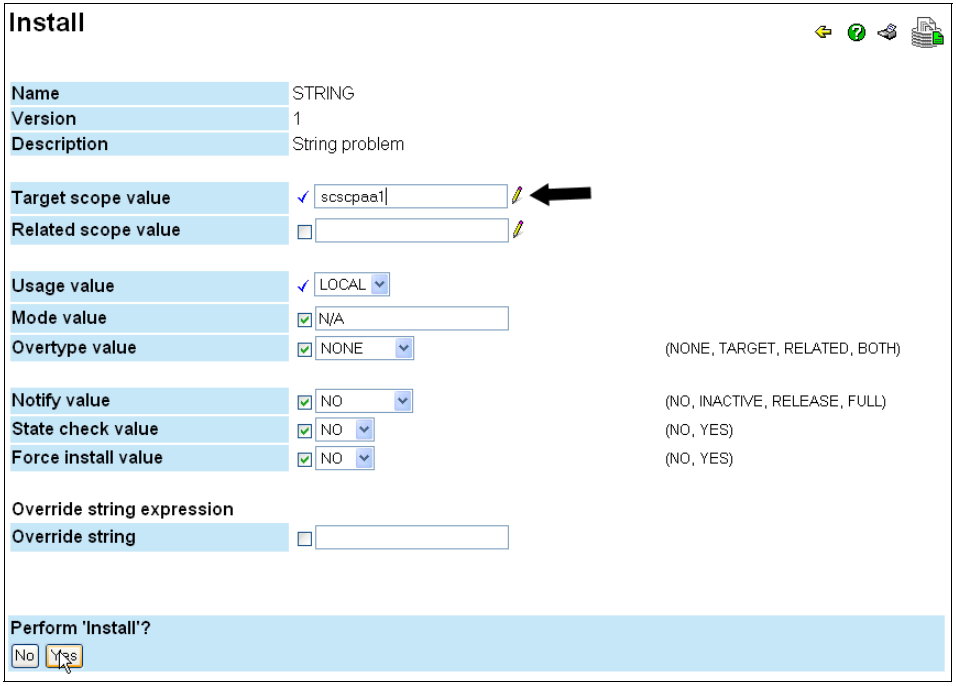


Figure 6-25 LSR pool Install view

EYUVC1230I is returned, indicating that the install was successful (Figure 6-26).

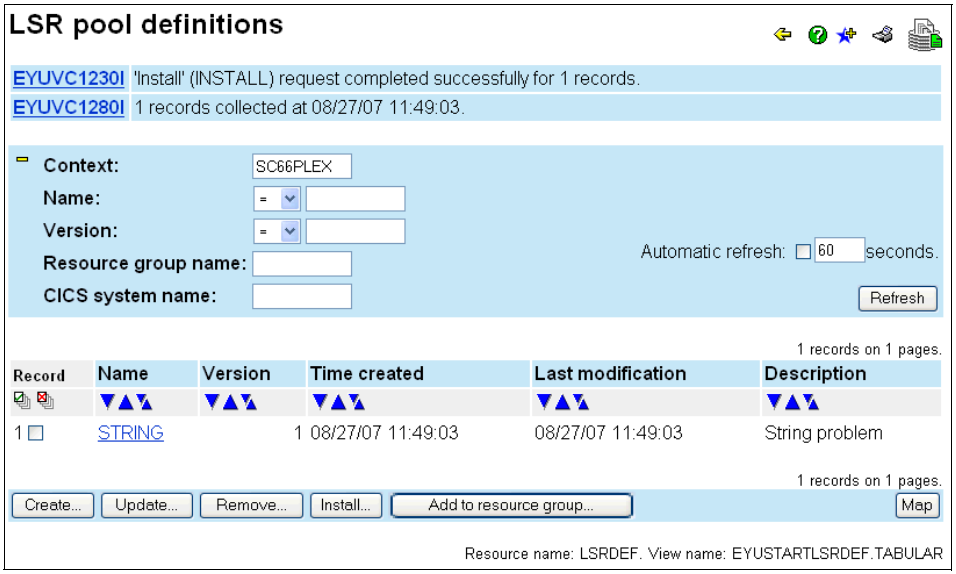


Figure 6-26 LSR pool definition with a successful install message

Close the 12 files that were imported with the application

You have the 12 file names that were installed with the new application. They have alternate indexes associated with them. Thus, there are twenty-four files to close. Change the LSR pool parameter from 02 to 04, then reopen.

The WUI lends itself to making large changes in a CICSplex quickly and easily. Go to the navigation frame and open the **Local files** view. Here we also set the scope to SCSCPAA1. By setting the File ID field to not equal (<>) and using the generic DFH* as the file name, the CICS files are not included in the view. See Figure 6-27.

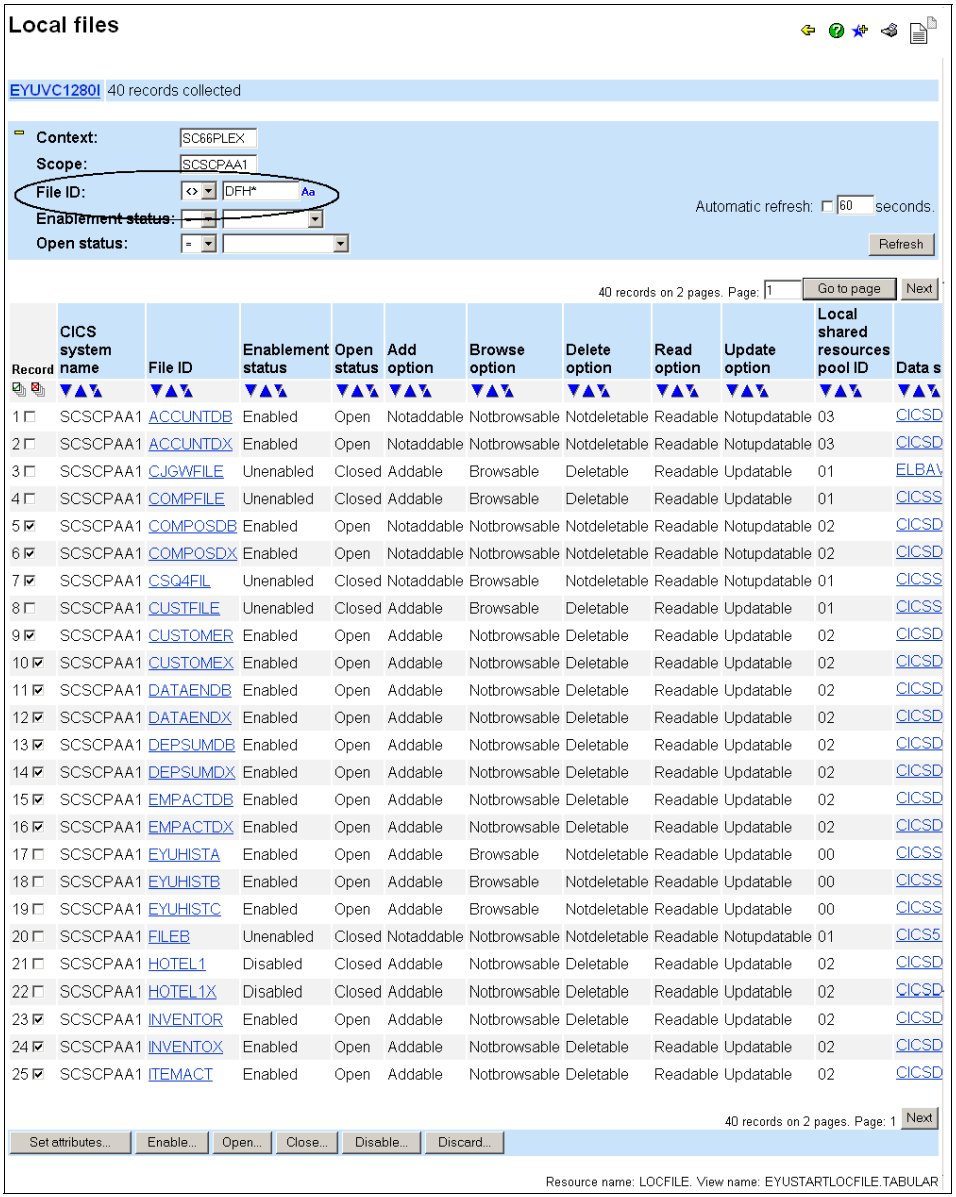
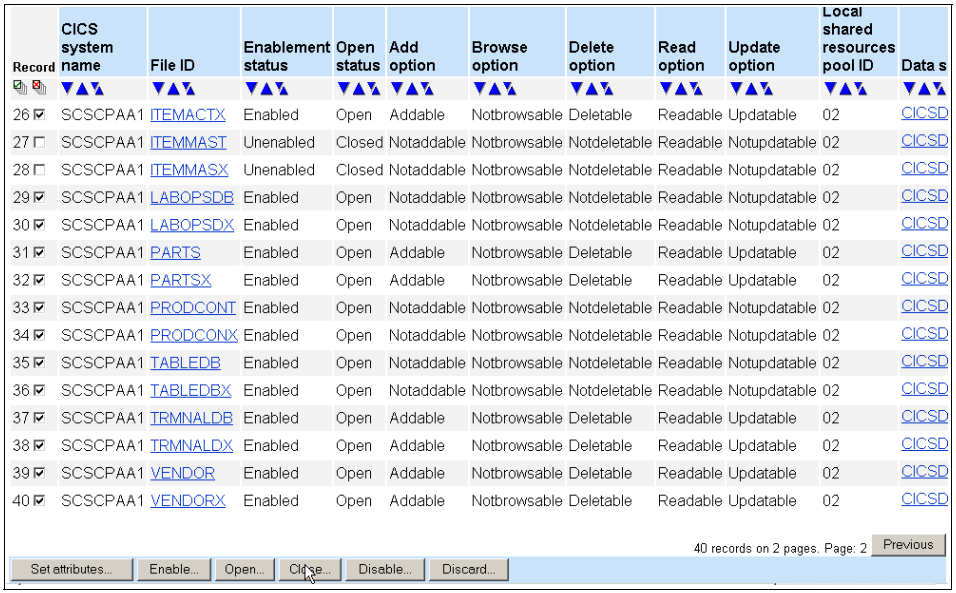


Figure 6-27 Page one of two Local files view

Mark each of the files that needs to be closed with a check in the record box (Figure 6-28). As the files to be altered span more than one WUI page, click the **Next** button and continue to mark the needed files on the second page.



Record	CICS system name	File ID	Enablement status	Open status	Add option	Browse option	Delete option	Read option	Update option	Local shared resources pool ID	Data s
26	SCSCPAA1	ITEMACTX	Enabled	Open	Addable	Notbrowsable	Deletable	Readable	Updatable	02	CICSD
27	SCSCPAA1	ITEMMAST	Unenabled	Closed	Notaddable	Notbrowsable	Notdeletable	Readable	Notupdatable	02	CICSD
28	SCSCPAA1	ITEMMASX	Unenabled	Closed	Notaddable	Notbrowsable	Notdeletable	Readable	Notupdatable	02	CICSD
29	SCSCPAA1	LABOPSDB	Enabled	Open	Notaddable	Notbrowsable	Notdeletable	Readable	Notupdatable	02	CICSD
30	SCSCPAA1	LABOPSDX	Enabled	Open	Notaddable	Notbrowsable	Notdeletable	Readable	Notupdatable	02	CICSD
31	SCSCPAA1	PARTS	Enabled	Open	Addable	Notbrowsable	Deletable	Readable	Updatable	02	CICSD
32	SCSCPAA1	PARTSX	Enabled	Open	Addable	Notbrowsable	Deletable	Readable	Updatable	02	CICSD
33	SCSCPAA1	PRODCONT	Enabled	Open	Notaddable	Notbrowsable	Notdeletable	Readable	Notupdatable	02	CICSD
34	SCSCPAA1	PRODCONX	Enabled	Open	Notaddable	Notbrowsable	Notdeletable	Readable	Notupdatable	02	CICSD
35	SCSCPAA1	TABLEDB	Enabled	Open	Notaddable	Notbrowsable	Notdeletable	Readable	Notupdatable	02	CICSD
36	SCSCPAA1	TABLEDBX	Enabled	Open	Notaddable	Notbrowsable	Notdeletable	Readable	Notupdatable	02	CICSD
37	SCSCPAA1	TRMNALDB	Enabled	Open	Addable	Notbrowsable	Deletable	Readable	Updatable	02	CICSD
38	SCSCPAA1	TRMNALDX	Enabled	Open	Addable	Notbrowsable	Deletable	Readable	Updatable	02	CICSD
39	SCSCPAA1	VENDOR	Enabled	Open	Addable	Notbrowsable	Deletable	Readable	Updatable	02	CICSD
40	SCSCPAA1	VENDORX	Enabled	Open	Addable	Notbrowsable	Deletable	Readable	Updatable	02	CICSD

Figure 6-28 Page two of two Local file view

Close the files by clicking the **Close** button at the bottom of the screen.

You get the Close confirmation view. In this view the name of the first file in the list is indicated for the close. See the arrow in Figure 6-29. Click **Yes to the 24 remaining** (Figure 6-29). The 24 are made up of the one being shown and the remaining 23.

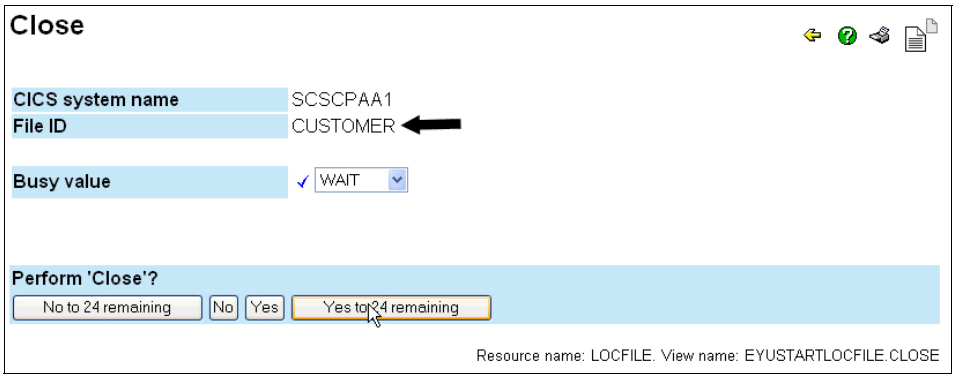


Figure 6-29 Close confirmation screen

You are returned to the second Local file screen (where the Close button was used) with a confirmation message EYUVC1230I at the top of the screen (Figure 6-30).

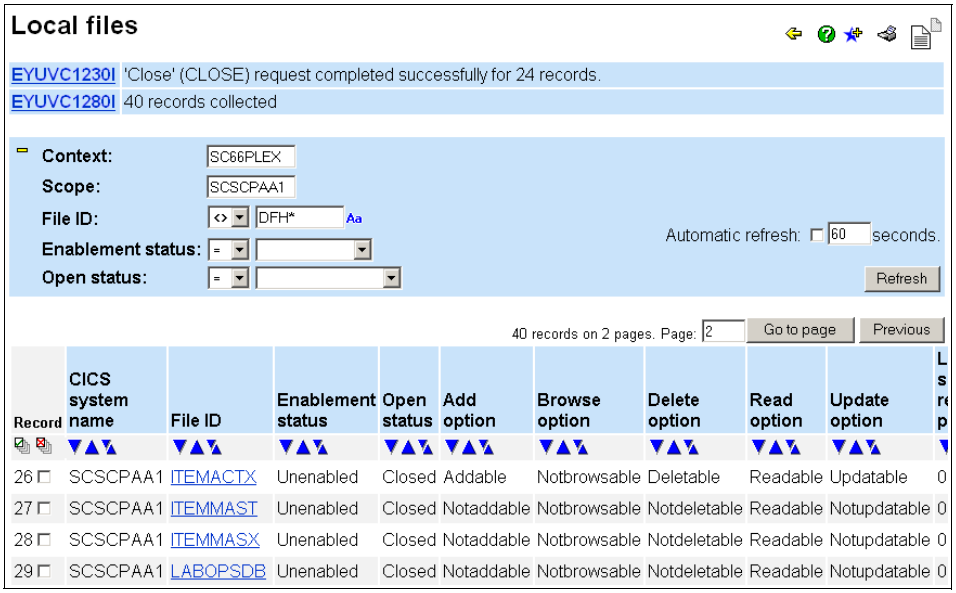
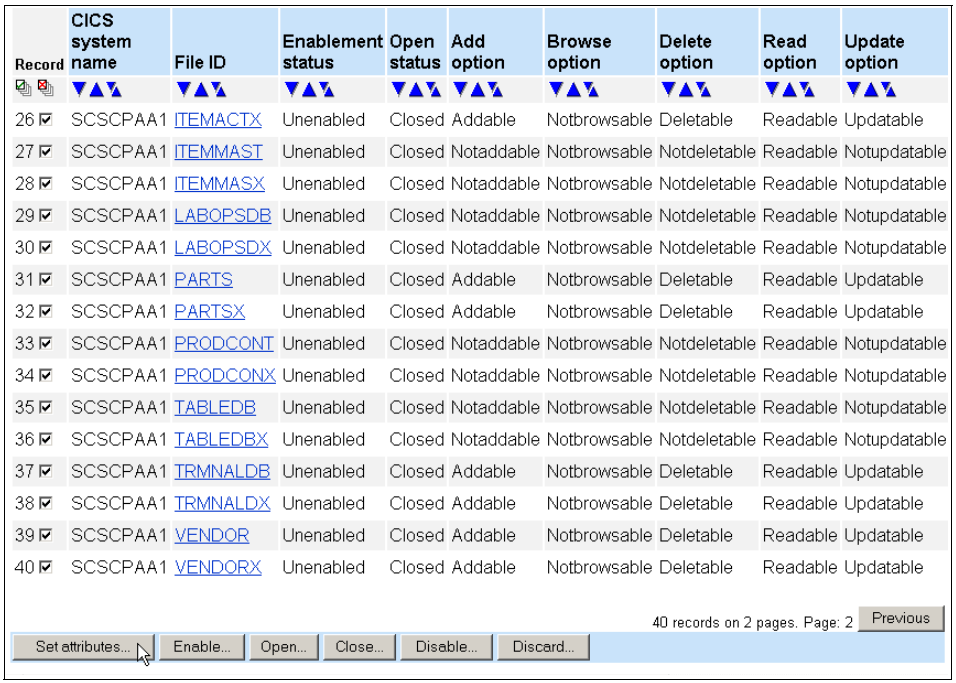


Figure 6-30 Local file view with the EYUVC1230I confirmation message

Note that the 24 files have been closed, and the Open status column in the display provides the new status of the files.

Change the LSR pool parameter in the file definitions

You can use the WUI's capability to make multiple changes by marking the files from the troubled application. This then allows us to move them all at once to a different LSR Pool. This time click the **Set attributes** button (Figure 6-31).



Record	CICS system name	File ID	Enablement status	Open status	Add option	Browse option	Delete option	Read option	Update option
26	SCSCPAA1	ITEMACTX	Unenabled	Closed	Addable	Notbrowsable	Deletable	Readable	Updatable
27	SCSCPAA1	ITEMMAST	Unenabled	Closed	Notaddable	Notbrowsable	Notdeletable	Readable	Notupdatable
28	SCSCPAA1	ITEMMASX	Unenabled	Closed	Notaddable	Notbrowsable	Notdeletable	Readable	Notupdatable
29	SCSCPAA1	LABOPSDB	Unenabled	Closed	Notaddable	Notbrowsable	Notdeletable	Readable	Notupdatable
30	SCSCPAA1	LABOPSDX	Unenabled	Closed	Notaddable	Notbrowsable	Notdeletable	Readable	Notupdatable
31	SCSCPAA1	PARTS	Unenabled	Closed	Addable	Notbrowsable	Deletable	Readable	Updatable
32	SCSCPAA1	PARTSX	Unenabled	Closed	Addable	Notbrowsable	Deletable	Readable	Updatable
33	SCSCPAA1	PRODCONT	Unenabled	Closed	Notaddable	Notbrowsable	Notdeletable	Readable	Notupdatable
34	SCSCPAA1	PRODCONX	Unenabled	Closed	Notaddable	Notbrowsable	Notdeletable	Readable	Notupdatable
35	SCSCPAA1	TABLEDB	Unenabled	Closed	Notaddable	Notbrowsable	Notdeletable	Readable	Notupdatable
36	SCSCPAA1	TABLEDBX	Unenabled	Closed	Notaddable	Notbrowsable	Notdeletable	Readable	Notupdatable
37	SCSCPAA1	TRMNALDB	Unenabled	Closed	Addable	Notbrowsable	Deletable	Readable	Updatable
38	SCSCPAA1	TRMNALDX	Unenabled	Closed	Addable	Notbrowsable	Deletable	Readable	Updatable
39	SCSCPAA1	VENDOR	Unenabled	Closed	Addable	Notbrowsable	Deletable	Readable	Updatable
40	SCSCPAA1	VENDORX	Unenabled	Closed	Addable	Notbrowsable	Deletable	Readable	Updatable

Figure 6-31 Local file view clicking the Set attributes button

You are presented with a view that provides the changeable attributes for this CICS resource. These are the same SET FILE commands that are available with the CEMT transaction and the CICS system programming interface (SPI).

Click the box next to the “Local shared resources pool ID” and change the 02 to the new LSR pool 04 (Figure 6-32). Click the **Yes to the remaining 24** button.

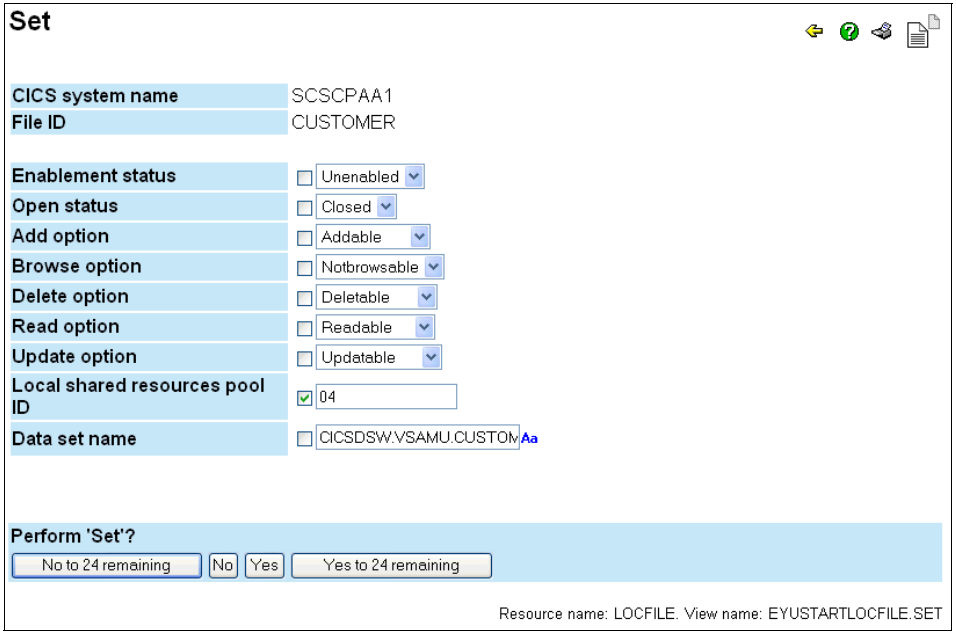


Figure 6-32 File Set view

Note that in Figure 6-33 the value in the “Local shared resources pool ID” column has changed.

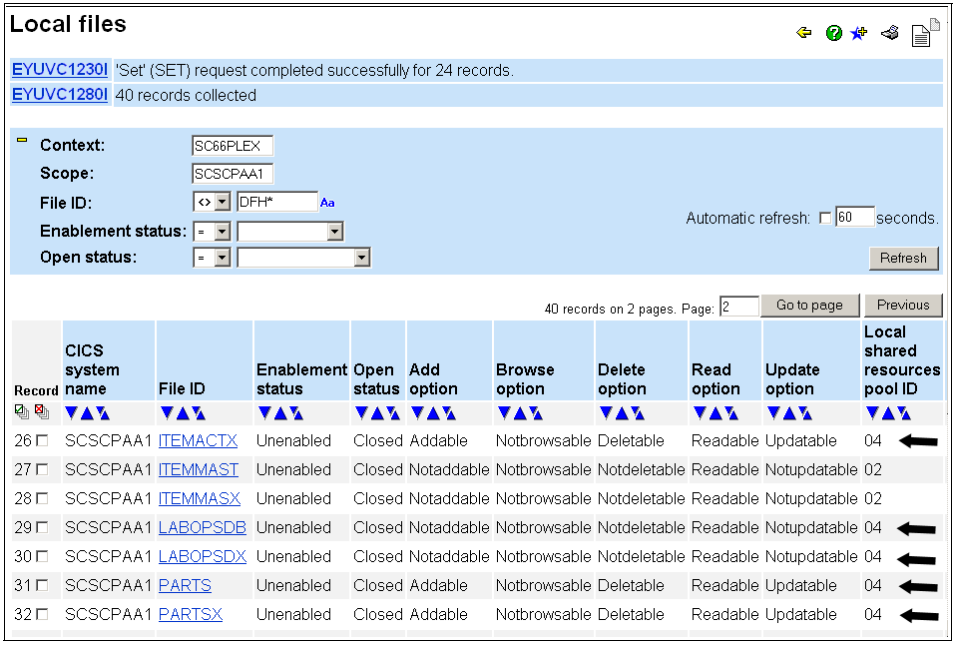


Figure 6-33 Local file attribute change confirmation

Reopen the files

This is the same process as closing the files:

1. Mark the files.
2. Click the **Open** button.
3. Confirm that you want the files open.
4. Verify that the opens occurred on the Local file view.

Verify that the problem has been alleviated

Check the RTA outstanding events view, and see that the SAMMAX event has been cleared. Monitor the Suspended tasks view for a while, ensuring that you do not get any file string waits.

Conclusion

This scenario allows you to:

- Verify that a problem exists.
- Define resources.
- Modify resources.
- Verify that the problem has been alleviated.

You would probably only have to change two or three files to LSR pool 04 at one time in order to minimize the disruption. Verify that the LSR pool 04 was built with enough buffers at the correct size. The file definitions were not permanently changed to use LSR pool 04. Only the run time was done.

6.3 DB2 problems

We use a couple of scenarios to demonstrate how the WUI can be used to work on problems that arise in the CICS-to-DB2 attachment. The first is a DB2 connection loss, and then we look at a DB2 transaction workload lockout.

Figure 6-34 gives you a high-level overview of the test system used for our test scenarios.

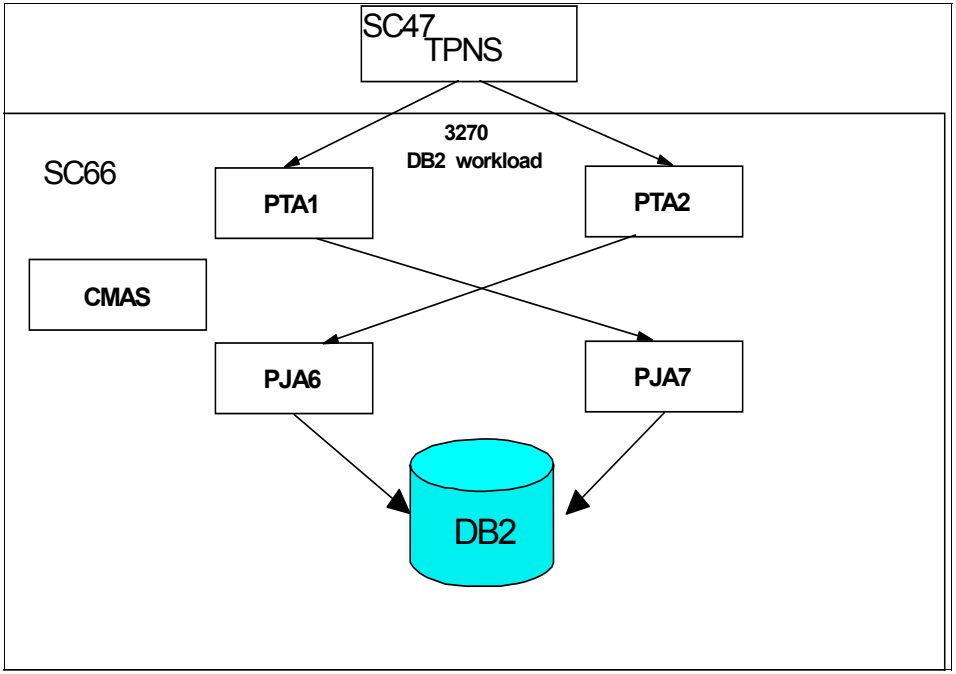


Figure 6-34 Subset of our test system architecture used for this section testing

Our basic test system consists of two TORs connected to two AORs connected to a single DB2 V7.1 subsystem. A VTAM generic resource is used to balance work between the two TORs. The actual DB2 transactions are statically routed to go to specific AOR regions. TPNS is used to run a varying workload running one of three CICS/DB2 transactions. One of these transactions performs an update to DB2.

6.3.1 Scenario: DB2 connection drop

The connection between the DB2 SUBSYSTEM and one of the CICS DB2 AORS fails, or someone inadvertently takes the connection away. We need to be notified of this before other problems occur such as stall conditions in the TOR, or stress conditions like Maxtask or SOS occur in the AORS.

Monitoring the DB2 connection

In the next section we show you how to set up CPSM so that when a DB2 connection is lost we receive a notification. CPSM offers the capability notification with the Real Time Analysis (RTA) MAS resource monitoring (MRM) function. To understand all of the functions of RTA and MRM, refer to *CICSPlex SM for CICS TS z/OS, Managing Resource Usage*, SC34-6846. You need to get the RTA administrative views for building our needed definitions, by going to the Home menu. Click the **Administration** link (Figure 6-35).

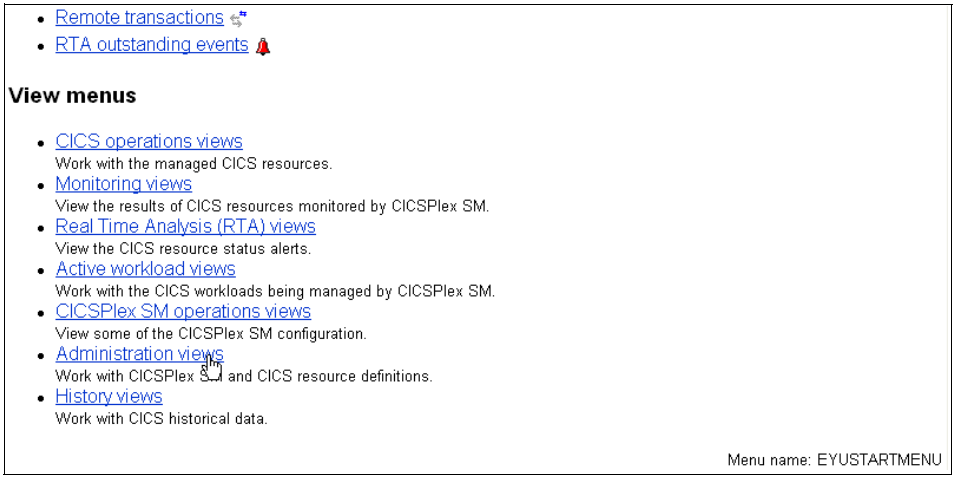


Figure 6-35 Home menu, Administration link

You now need the definitions for MAS resource monitoring, using the RTA component of CICSPlex SM. Click the **RTA MAS resource monitoring** link. Refer to Figure 6-36.

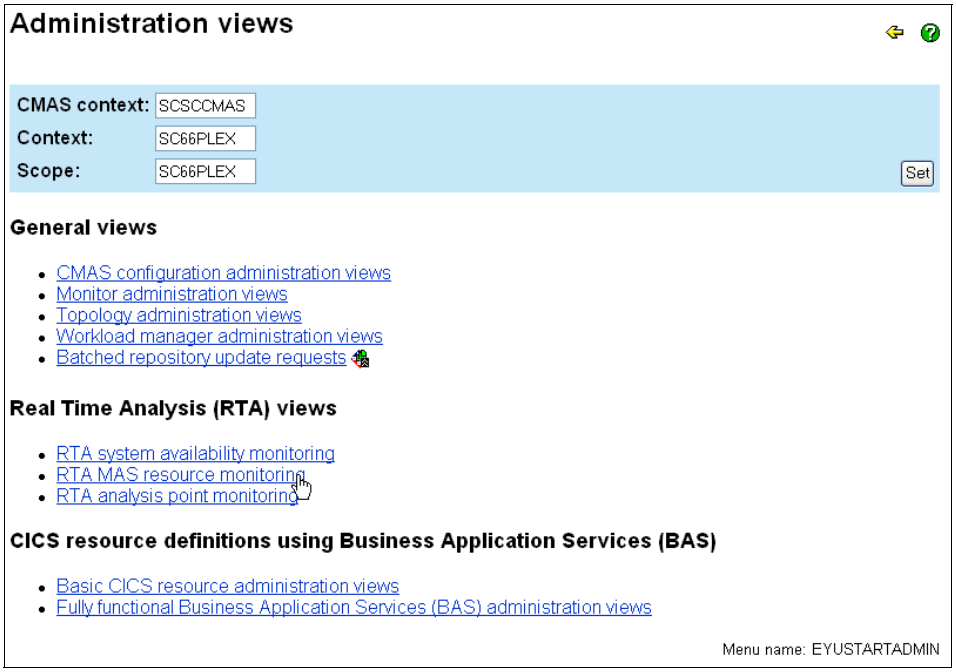


Figure 6-36 Administration views

Once you get into the RTA MAS resource monitoring view you need to understand what you want to build, and the steps that are necessary to make it happen. You start building this notifying process by building an action definition. This can be done by clicking the **Actions** hyperlink, then clicking the **Create** button at the bottom of the page.

When you click the **Create** button, you are presented with a blank Action definition screen. Fill in the blanks as in Figure 6-37 and finish the create by clicking the **Yes** button.

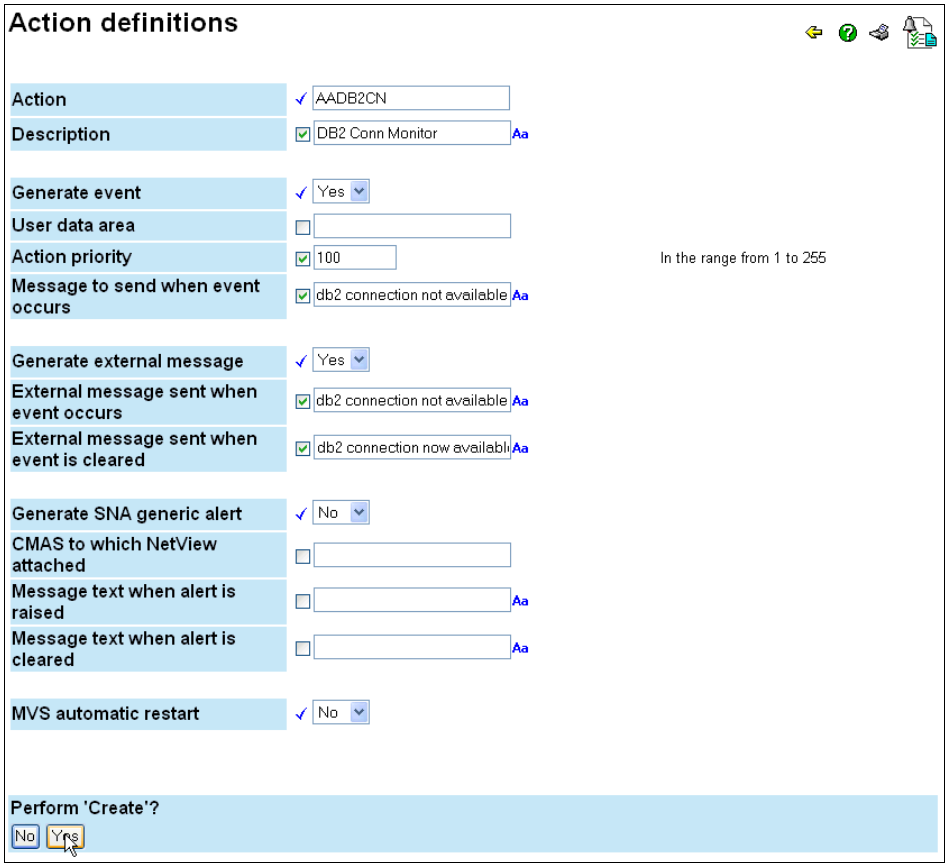


Figure 6-37 Action definition, the start of the notification process

After clicking Yes, you get the confirmation that our action definition has been created. The EYUVC1230I is returned (Figure 6-38) and our definition is on the list.

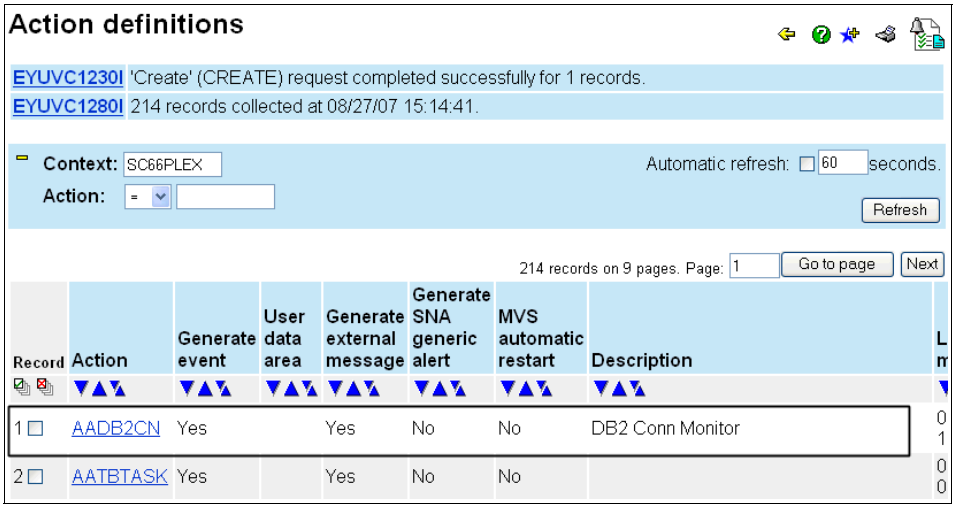


Figure 6-38 Action definition confirmation

Go back to the RTA MAS resource monitoring menu and choose **Evaluations** (Figure 6-39).

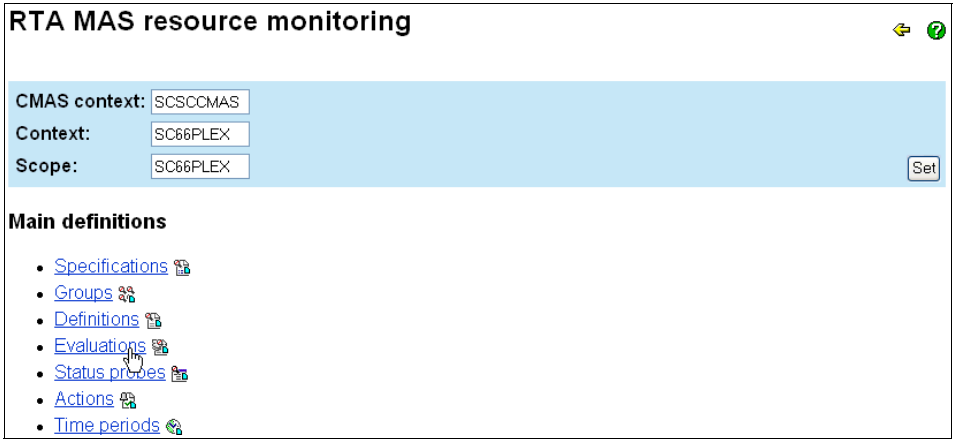


Figure 6-39 RTA MAS resource monitoring, requesting an Evaluation definition view

This provides us with all of the evaluation definitions. Evaluations definitions can be created by clicking the **Create** button at the bottom of the page. When you

click the **Create** button, you are presented with a blank Evaluation definition screen.

Fill in the blanks as in Figure 6-40. Use the same name for the evaluation definition as you did with the action definition. Set the sample interval to 30 seconds, which may be too large, but can be adjusted at a later time. The resource table is the DB2CONN table that gives us the field CONNECTST (connection status). If this attribute is set to NOTCONNECTED, then there should be an alert issued. Click the **Yes** button to create the definition.

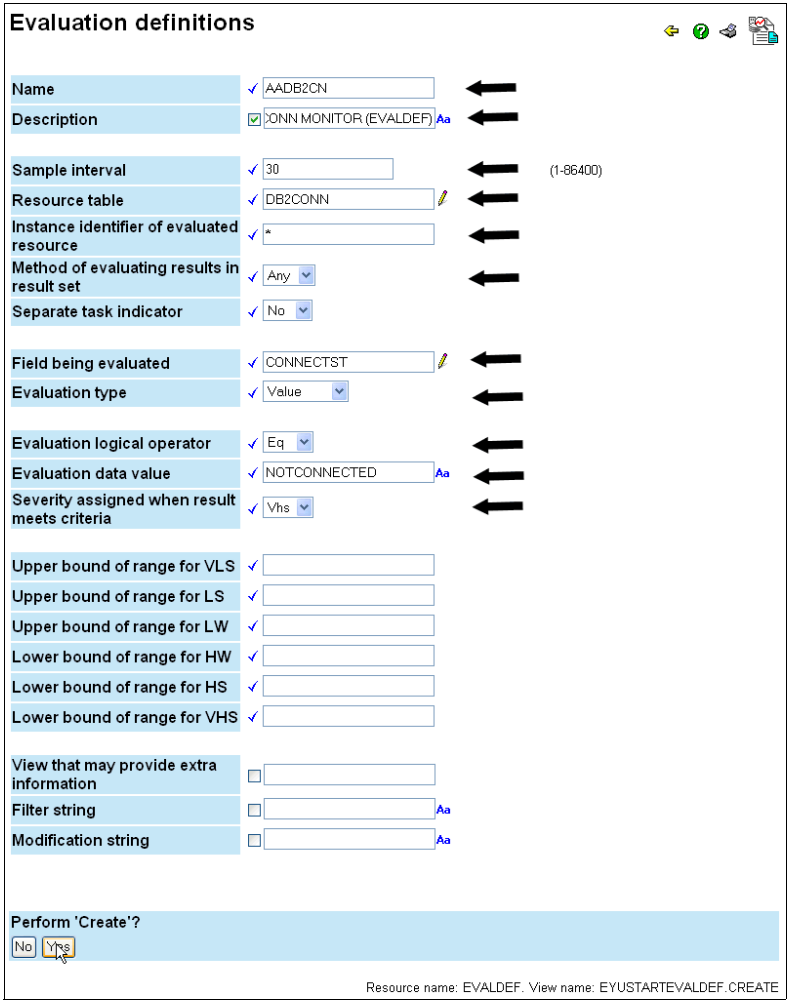


Figure 6-40 Evaluation definition, allowing for mutlitple defaults

You now need to define an RTA definition. This dictates how often the information gathered from the Evaluation definition will be analyzed. Go back to the RTA MAS resource monitoring page and click **Definitions**. See Figure 6-41.

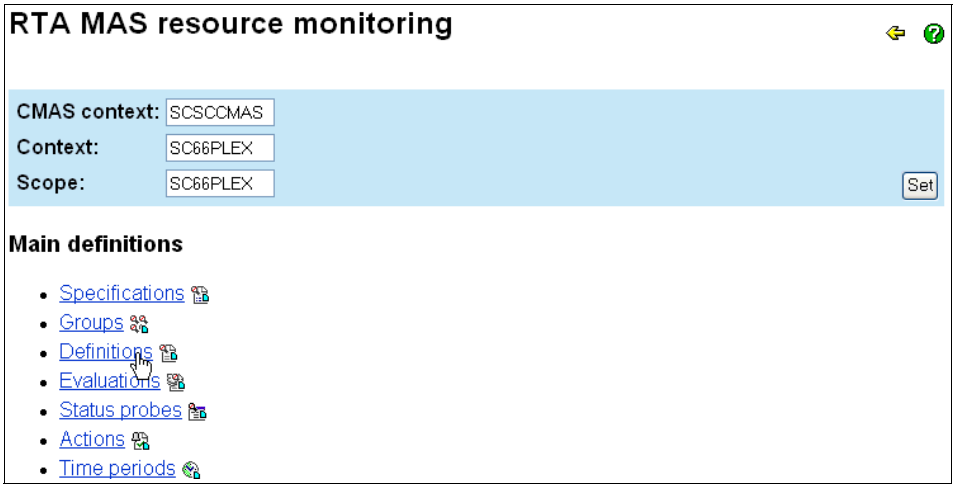


Figure 6-41 RTA MAS resource monitoring, requesting an RTA definition view

Here again we follow our naming convention and give our RTA definition the same name as our evaluation and action definitions. Knowing that the rate at which data is gathered is every 30 seconds (from the EVALDEF), you set our analysis of the data gathered at twice that rate, every minute. This guarantees that the data you are analyzing is current. The data gathered comes from the agent transactions running in the CICS that is connected to DB2. The *oldest* that the data evaluated by the RTADEF will be is 29 seconds old.

Click the **Yes** button to create the definition (Figure 6-42). Now that the definitions have been created they need to be associated with our CICS regions that have connections to DB2.

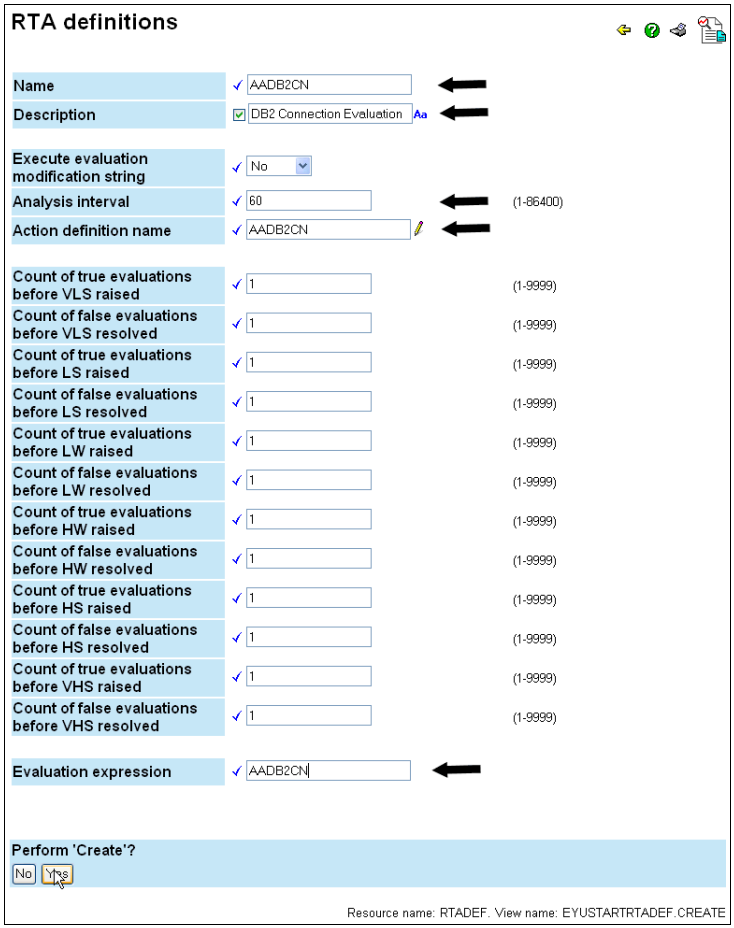


Figure 6-42 RTA definition

At the bottom of the page you have the capability of installing this definition immediately with the Install button. If we want to have this definition installed automatically when the regions are started we would need to add it to an RTA group. You can also set this up to run every time that the regions start up with the **Add to RTA group** button. The group then needs to be associated with an RTA specification. This RTA specification then needs to be associated with CICS regions. In this example we install this RTA definition directly into our CICS regions SCSCPJA6 and SCSCPJA7.

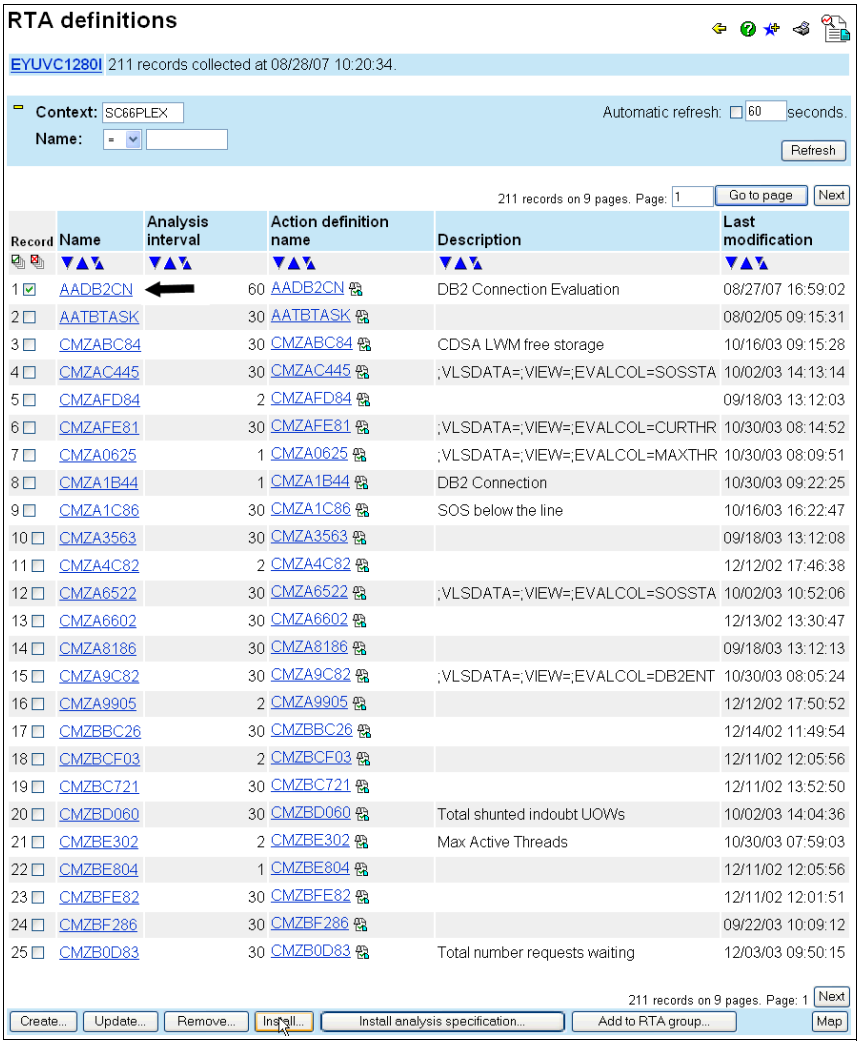


Figure 6-43 RTA definition tabular view

Check the box beside AADB2CN and click the **Install** button. You get the page shown in Figure 6-44.

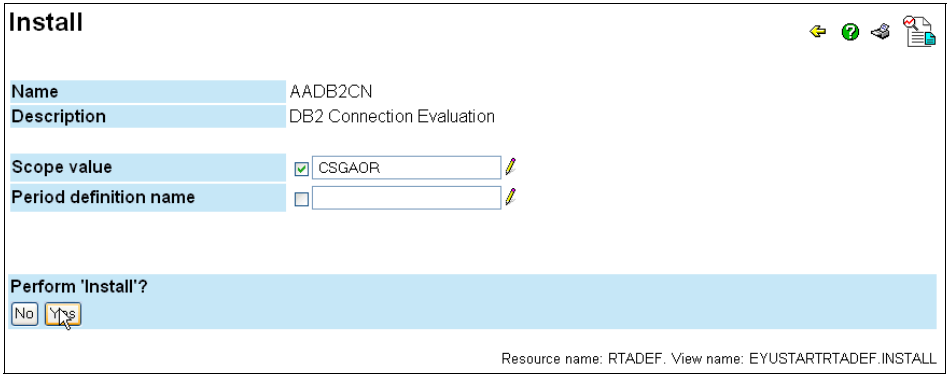


Figure 6-44 RTADEF install screen

Fill in the scope value of the CICSGRP CSGAOR. This group contains the two AORs that are connected to DB2 for this workload. You get the message EYUVC1230I indicating that the RTADEF was installed successfully. See Figure 6-45.

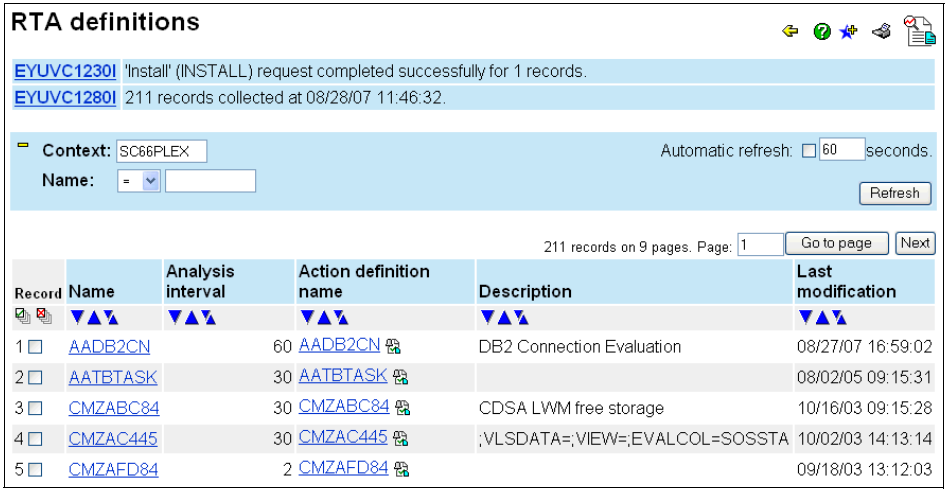


Figure 6-45 RTADEF install confirmation

We now check that we are correctly monitoring the DB2 connections. Go back to the main menu and click the **Real Time Analysis (RTA) views** (Figure 6-46).

Figure 6-46 Main menu going to the RTA views

Then click **Real Time Analysis (RTA) installed analysis and status definitions**, as in Figure 6-47.

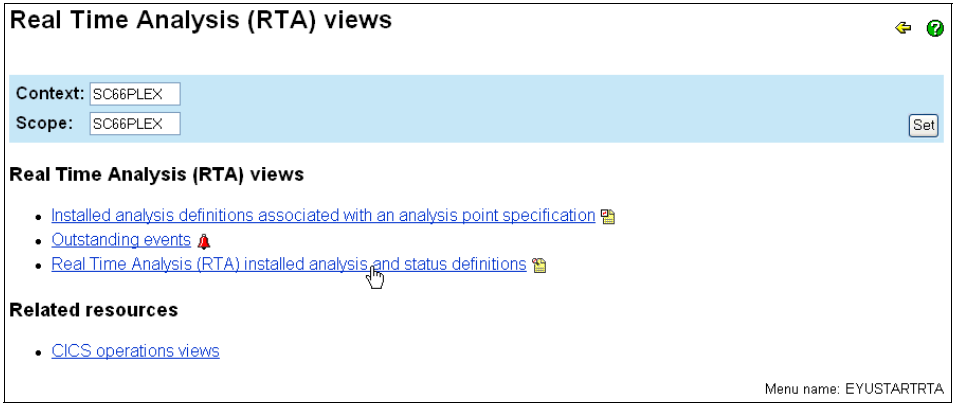
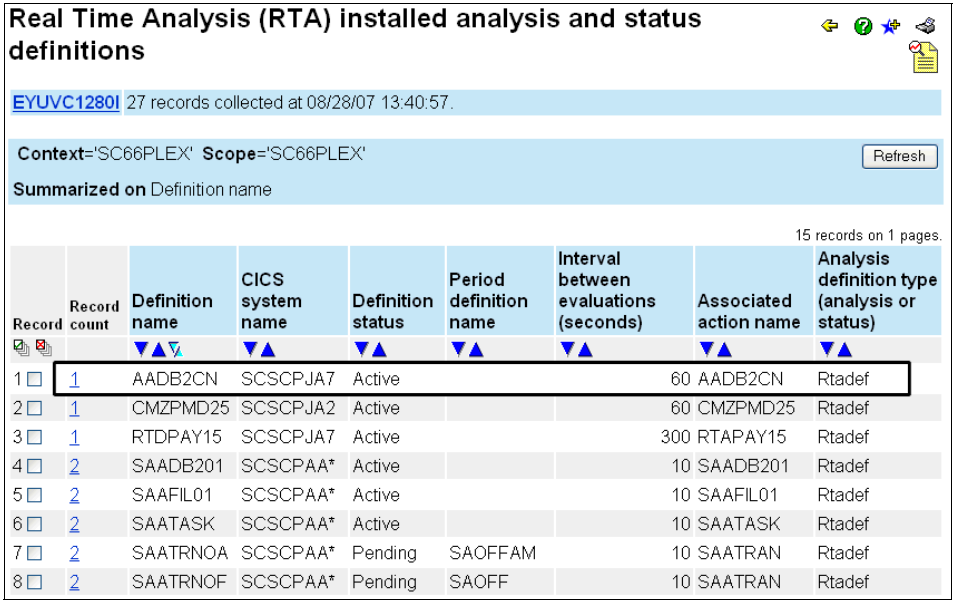


Figure 6-47 RTA views screen

When you look at the screen initially, you do not see our definition. We click the summarize icon in the Definition name column . This presents us with a view that displays our definition in the first row (Figure 6-48).



Record	Record count	Definition name	CICS system name	Definition status	Period definition name	Interval between evaluations (seconds)	Associated action name	Analysis definition type (analysis or status)
1	1	AADB2CN	SCSCPJA7	Active		60	AADB2CN	Rtadef
2	1	CMZPMD25	SCSCPJA2	Active		60	CMZPMD25	Rtadef
3	1	RTDPAY15	SCSCPJA7	Active		300	RTAPAY15	Rtadef
4	2	SAADB201	SCSCPAA*	Active		10	SAADB201	Rtadef
5	2	SAAFIL01	SCSCPAA*	Active		10	SAAFIL01	Rtadef
6	2	SAATASK	SCSCPAA*	Active		10	SAATASK	Rtadef
7	2	SAATRNOA	SCSCPAA*	Pending	SAOFFAM	10	SAATRAN	Rtadef
8	2	SAATRNOF	SCSCPAA*	Pending	SAOFF	10	SAATRAN	Rtadef

Figure 6-48 RTA installed status

From this view we can see that there only appears to be one installed definition called AADB2CN. We attempted to install the definition into CICS group CSGAOR that contained SCSCPJA6 and SCSCPJA7. From Figure 6-48 on page 354 we can see that the definition has been installed in SCSCPJA7. It seems as though the install into SCSCPJA6 has failed.

First we check that CSGAOR still contains both SCSCPJA6 and SCSCPJA7. See Figure 6-49.

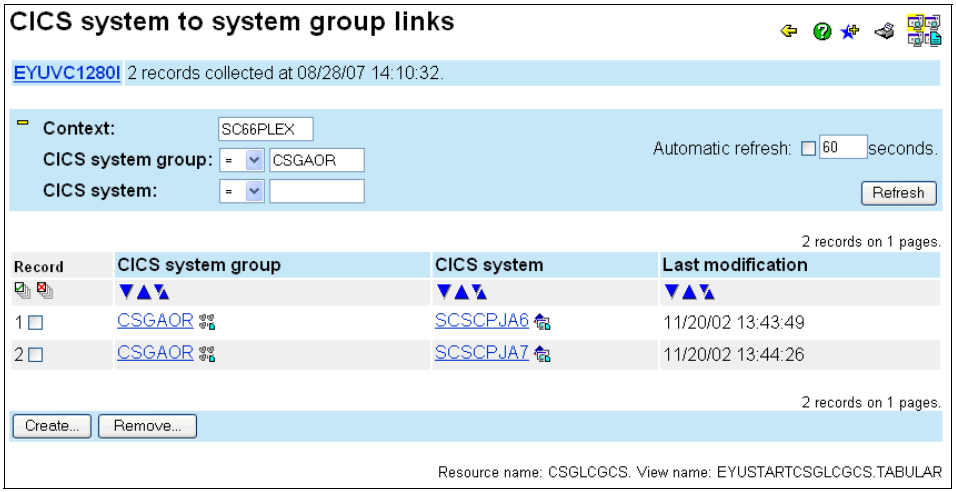


Figure 6-49 The CSGAOR group

We see that both systems are still contained in the CSGAOR group. Next we check the CMAS log to see whether there are any messages relating to the install.

The CMAS log explains what has happened. Refer to the messages in Example 6-1.

Example 6-1 Messages from the CMAS log

```
EYUPM0006I SCSCCMAS The RTADEF (AADB2CN) has been successfully installed for Context(SC66PLEX)
EYUPM0006I SCSCCMAS Scope(SCSCPJA7)
EYUPM0110E SCSCCMAS RTAMRM is not active for Context(SC66PLEX) Scope(SCSCPJA6). No definitions installed.
```

To check the status of RTA in the SCSCPJA6 region we go to the main menu and click the **CICSPlex SM operations views** link. We then click the **MASs known to CICSplex** link. When we examine system SCSCPJA6 we see that the real-time analysis status is SAM (Figure 6-50). In order to successfully install an RTA definition this should be Yes or Mrm.

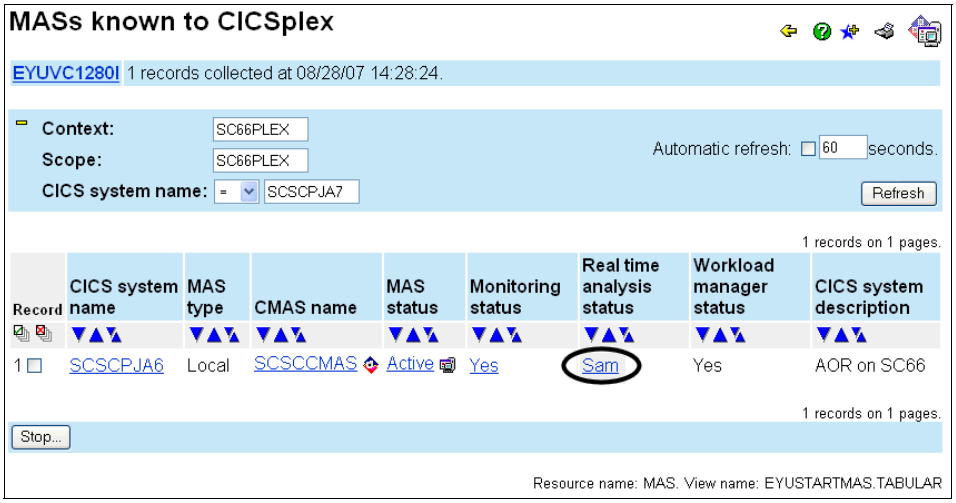


Figure 6-50 MAS summarized view

When we attempt to change the status we get an error. Further investigation shows that SCSCPJA6 does not have an RTA specification installed. At this point you would associate an RTA specification with SCSCPJA6. For the purposes of this example, we do not go through the process of fixing SCSCPJA6. We continue with the RTA definition installed in system SCSCPJA7 only.

You have used a number of real-time analysis administrative views to build an RTA definition, an evaluation definition, and an action definition that allow us to monitor the connection status of our DB2 connections. An overview of RTA's objects is seen in Figure 6-51.

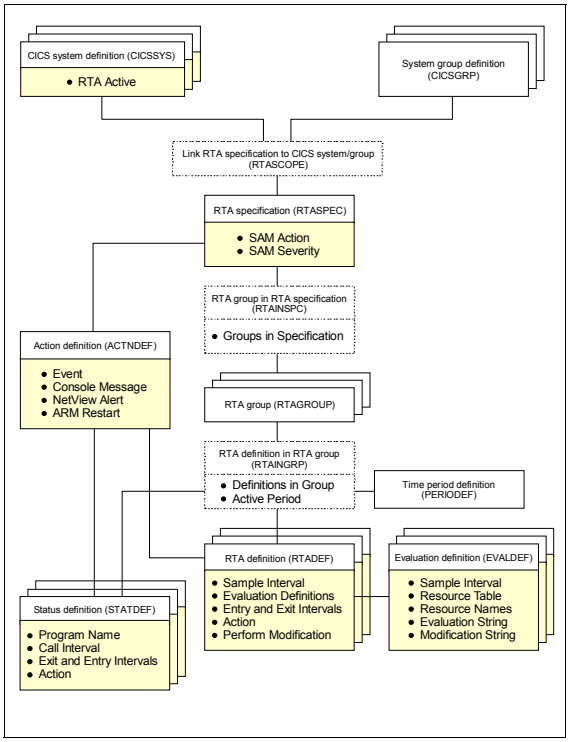


Figure 6-51 RTA objects and relationships

The connection to DB2 from SCSCPJA6 drops

The connection between the DB2 subsystem D7Q2 fails, or someone inadvertently disconnects it.

Is there a real problem

Now that we have our definitions in place for PJA7, we go to the RTA outstanding events view. This shows that we have an event that matches the name of the RTA definition we created. We also see that the alert relates to the SCSCPJA7 CICS region (Figure 6-52).

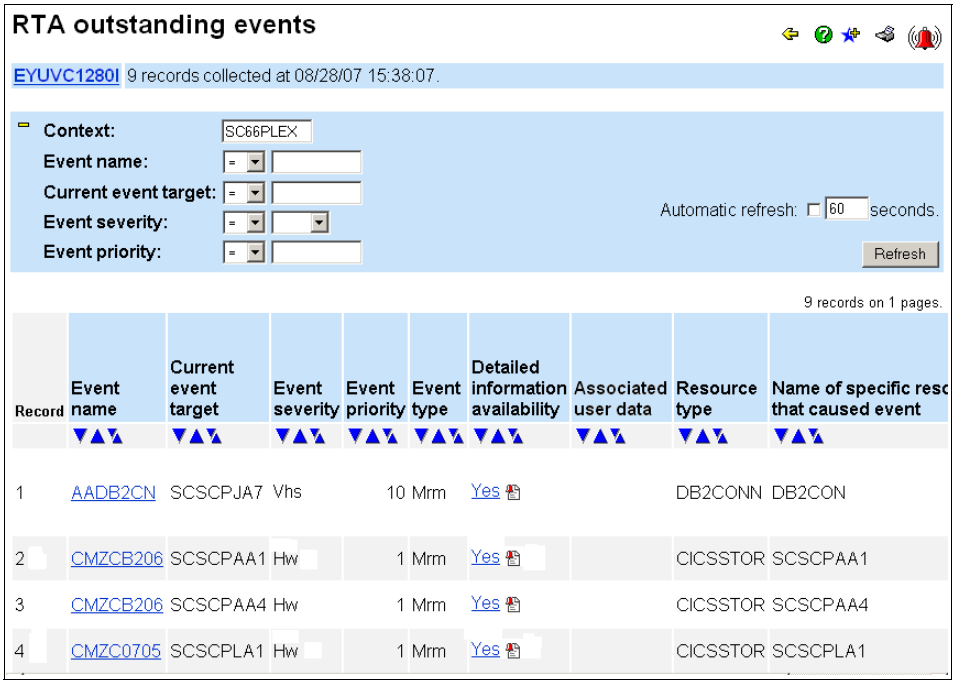


Figure 6-52 RTA outstanding events view showing AADB2CN event

Go to the navigation frame and open up the **Files & DB2** toggle, and click the **DB2 connections** link (Figure 6-53).

Figure 6-53 DB2 connections from navigator frame

Yes, you really have a problem

The DB2 connection view (Figure 6-54) confirms what the alert has signalled: Your connection has been lost from the SCSCPJA7 region.

Let us fix the problem

From this screen you can put the connection back. Refer to Figure 6-54. Check the box by SCSCPJA7 and click the **Connect** button at the bottom of the page.

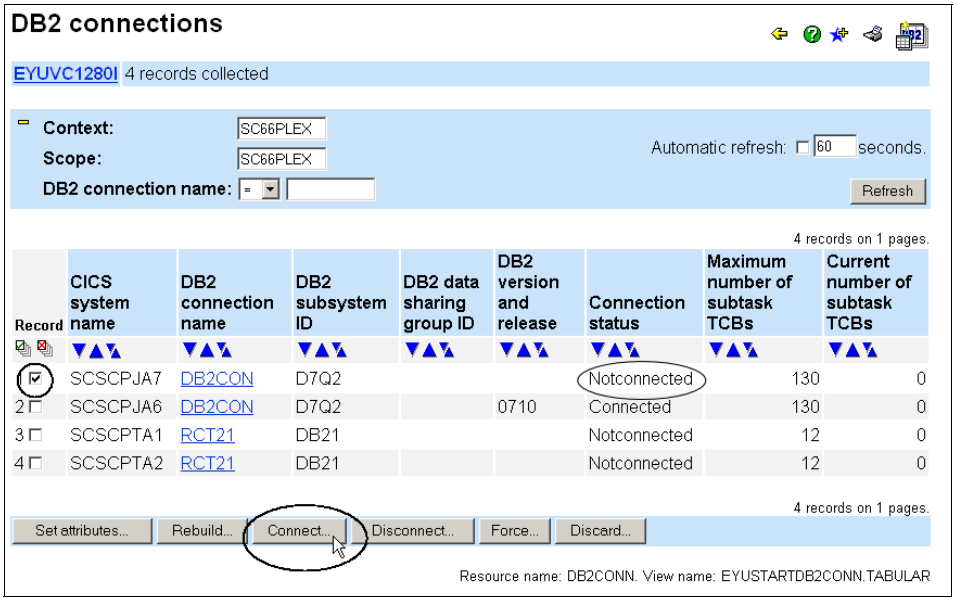


Figure 6-54 DB2 connection view, ready to make the connection

You now get a new window for confirmation that you *really* want to make this connection (Figure 6-55).

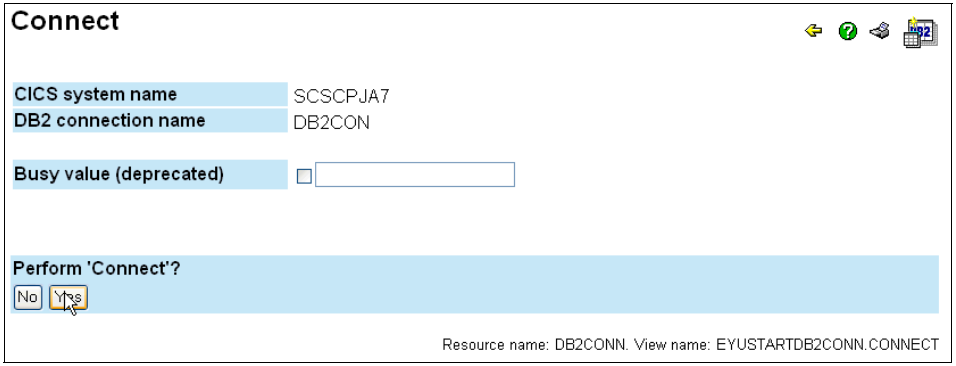


Figure 6-55 Connect confirmation view

Click the **Yes** button and you are taken back to the DB2 connections view, where you notice that the status of the connection has changed to connected (Figure 6-56).

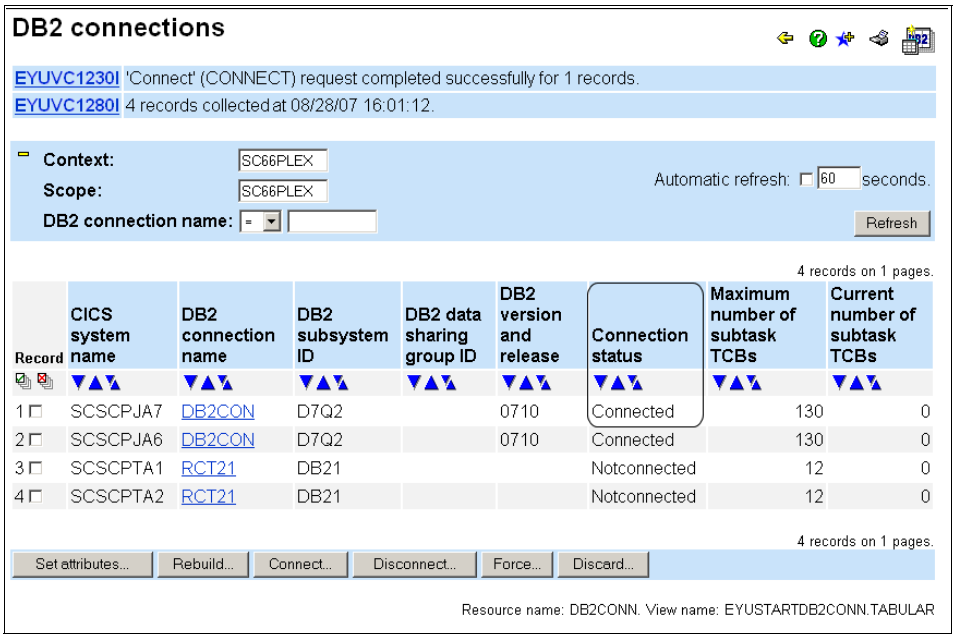


Figure 6-56 DB2 connection completed

Verify that the problem has been fixed

Go back to the RTA Outstanding Events view and note that your AADB2CN event has been cleared.

Note: We have not found out why the DB2 connection went away, and in the example above, DB2 was up when we reconnected. CICSPlex SM could have done this automatically by changes to the EVALDEF modification expression and execute modification expression values.

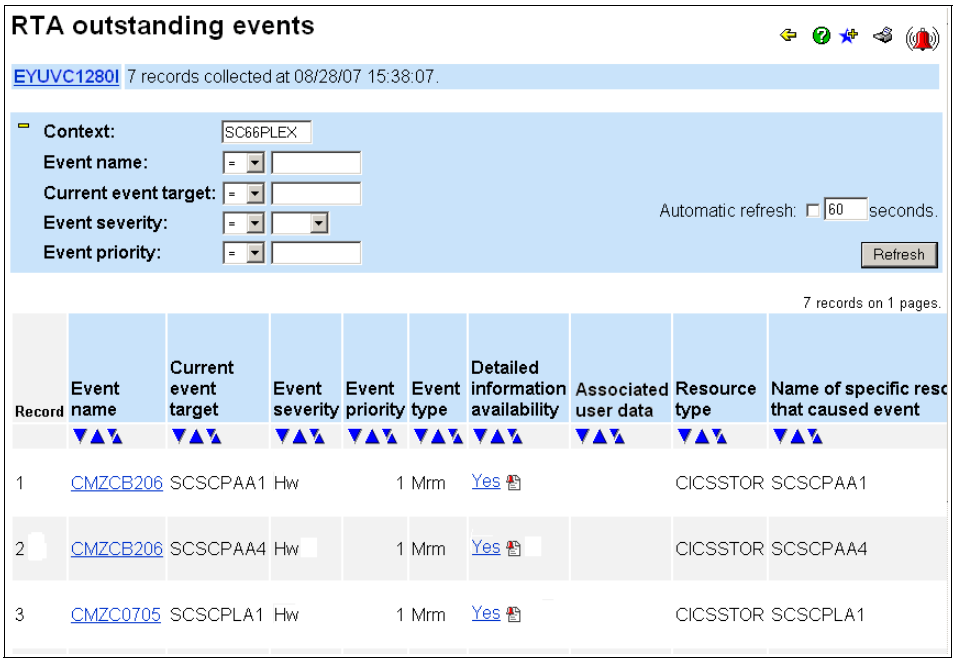


Figure 6-57 RTA outstanding event cleared

Conclusion

Your connection is back in place. You need to get the MAS resource monitoring active in SCSCPJA7, so that the DB2 connection can be monitored from that region. The RTA facilities provided by CICSPlex SM can be used to monitor any number of resources in your CICSplex environment.

6.3.2 Insufficient pool threads cause MAXTASK

This is a contrived situation that shows a new application being successfully deployed, even though it initially causes problems. We make changes to CICS

resources via the WUI that allow the application to remain installed without having to back it out to fix errors.

The scenario

A new application that interacts with DB2 has been installed. The AOR regions (SCSCPJA6 and SCSCPJA7) that connect to DB2 run with CICS maxtasks set to 50. The application has been run in the test environment successfully.

Is there a real problem

When the application is deployed into the production environment, users report that their queries are taking too long and their terminals are hanging. Check the RTA outstanding events screen and you find a max task condition. See Figure 6-58.

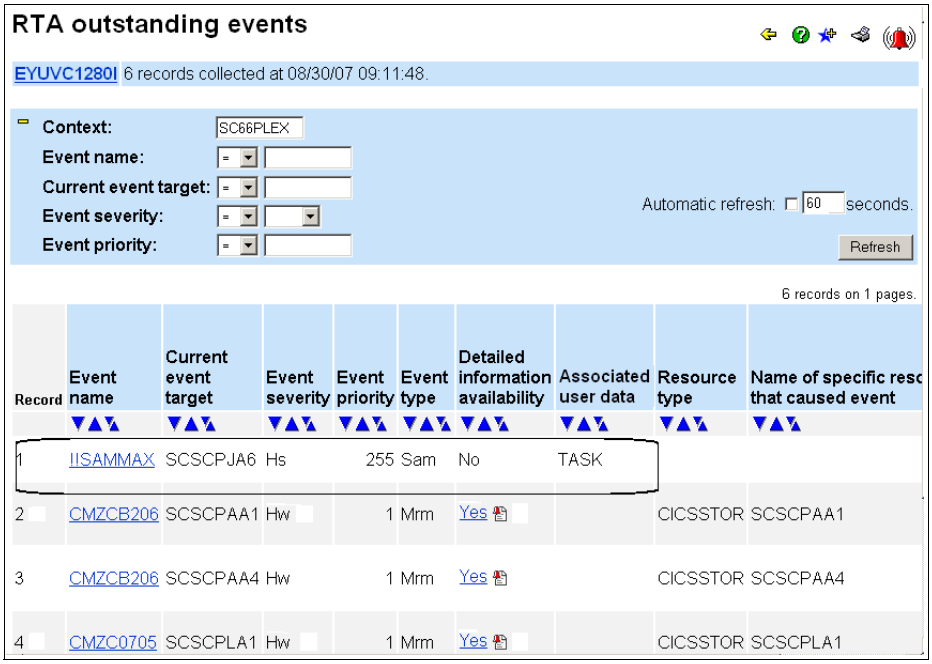


Figure 6-58 RTA Events screen SCSCJPA6 is under stress

We can see form this view that region SCSCPJA6 is at max tasks. This is likely to be the reason that users are seeing problems with the application.

Yes, there is a problem

We now go to the Suspended tasks view (SUSPENDED) that we created in Chapter 5, “WUI view modification and customization” on page 177. We change

the Scope field at the top of the view to CSGAOR and click the **Refresh** button. This restricts the results returned to just those suspended tasks in our AORs. When we examine the results returned, we find that most of the tasks indicate that the reason they are suspended is CDB2RDYQ (Figure 6-59 on page 365). The CICS Problem Determination Guide states a reason of CDB2RDYQ means that the task is waiting for a thread to become available. The resource name details the DB2 entry or pool for which there is a shortage of threads. You cannot purge the task when it is in this state.

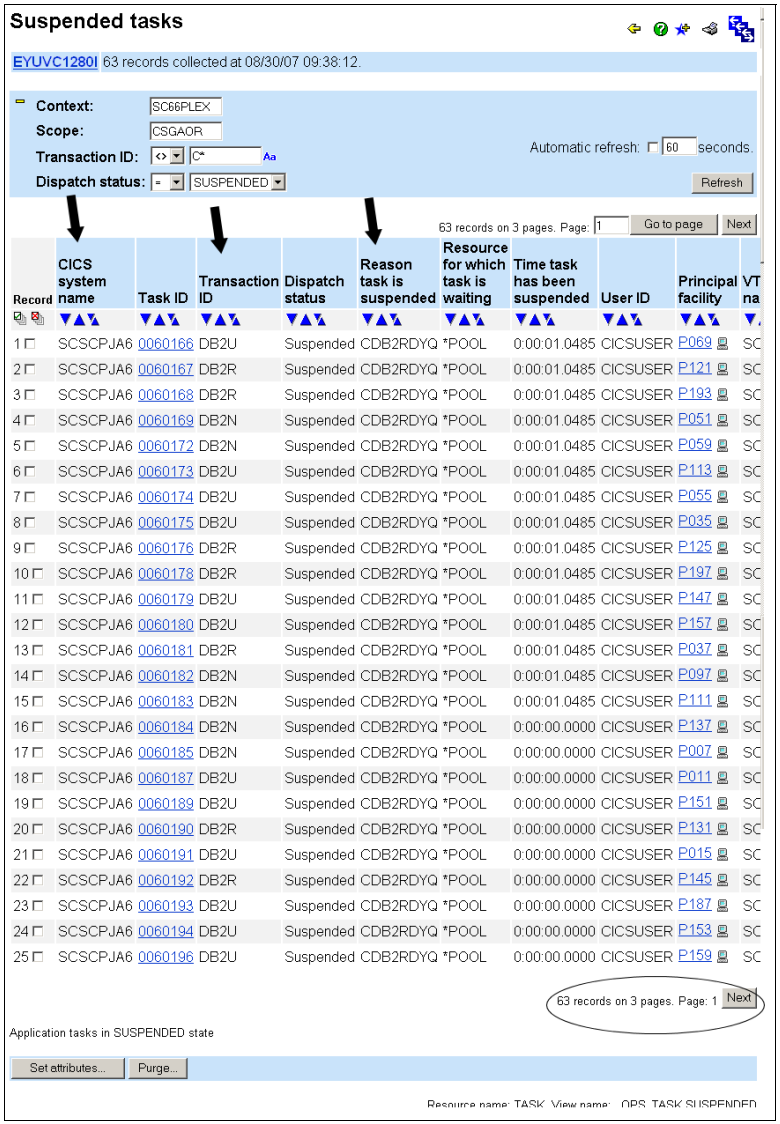


Figure 6-59 Suspended task view

We now restrict the scope to SCSCPJA6 by changing the scope field and clicking the **Refresh** button. This allows us to restrict the data to just those tasks in the region that are having the problem. We now check that there are no other reasons why tasks are suspended in the region. To do this we click the Summarize icon on the Reason task is suspended column. See Figure 6-60.

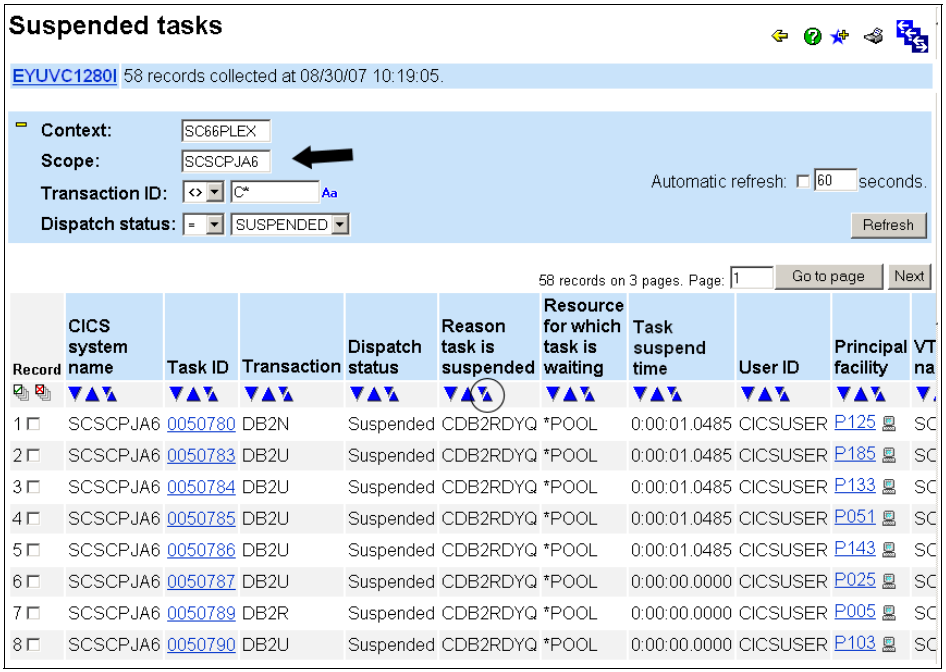


Figure 6-60 Suspended task with the SCSCPJA6 set to the scope

Figure 6-61 shows the result of the summarization. We can see that there are only two reason for the suspends: the ready queue waits and the max task waits. We can therefore conclude that the ready queue waits are the source of the problem.

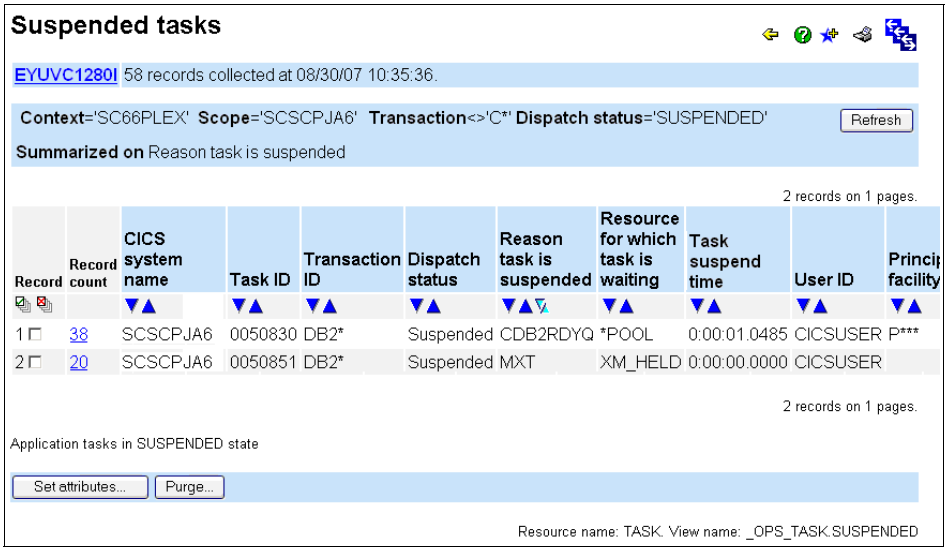


Figure 6-61 Suspended tasks summarized

You need to get out of the MAXTASK condition first, so you go to the navigation frame and click the **Regions** toggle, and then click the **CICS regions** link. Since your scope is still set to SCSCPJA6, only one region is presented in the view (Figure 6-62).

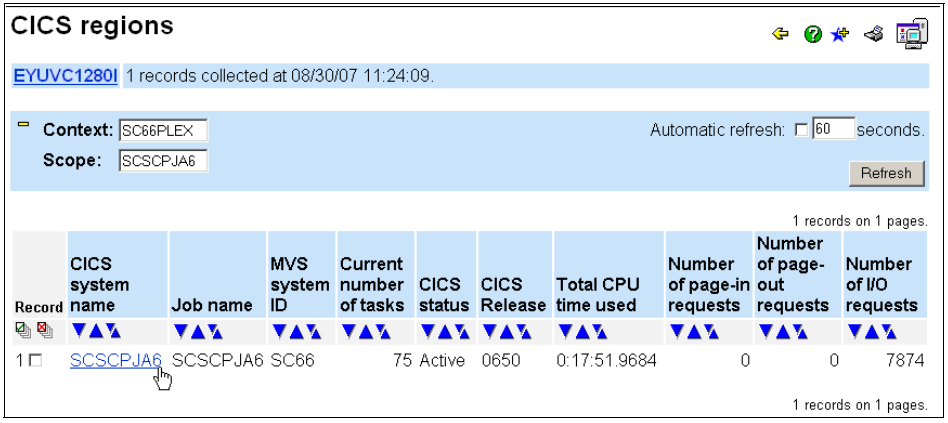


Figure 6-62 Hyperlink on the CICS system name

When you click **SCSCPJA6** you go to the first detailed view for the CICS region. You need to scroll down until you find the link for Current number of tasks. See Figure 6-63.

Number of load requests	520
Total loading time	0:00:01.8579
Number of waiting loader requests	0
Total load waiting time	0:00:00.0214
LIBRARY search order updates	9
LIBRARY search order update time	0
Load requests waited due to search order update	0
Number of times LIBRARY reopened and load retried	0
Current number of tasks	75
Number of tasks waiting for load requests	3
Peak number of tasks waiting for load requests	1
Number of times maximum suspended tasks reached	3
Default remote system	Not applicable
CICS start time	08/30/07 08:07:44
Total CPU time used	0:00:08.7278

Figure 6-63 CICS region link to detail 2 view

The next view displayed allows you to change the maximum number of active and suspended tasks (MAXTASKS). SCSCPJA6 currently has a limit of 50. We change this limit to 100, making sure that the box beside the value is checked (Figure 6-64).

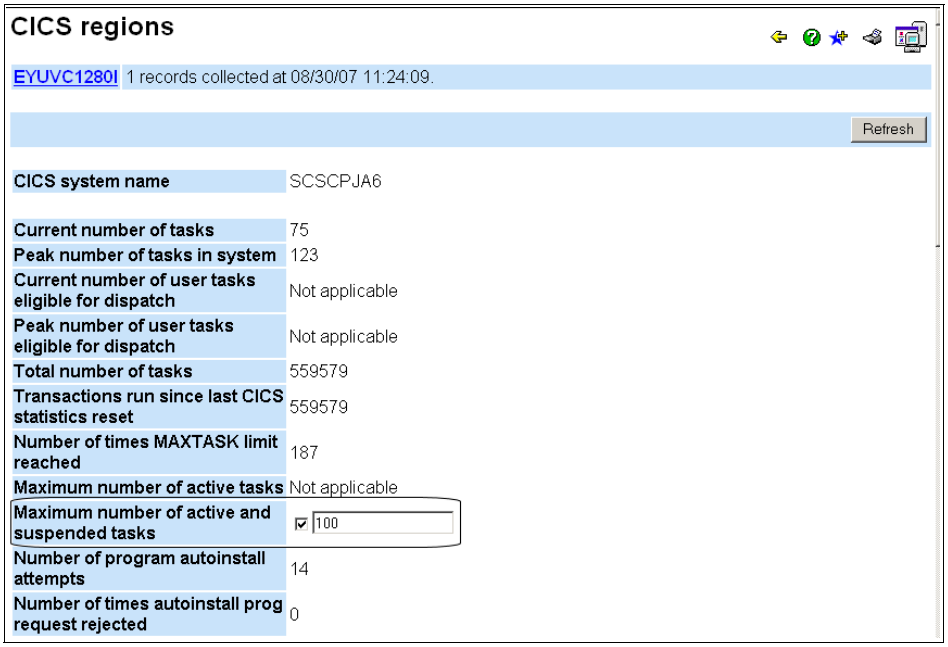


Figure 6-64 CICS region changing maxtask

To make the change click the **Apply changes** button at the bottom of the page (Figure 6-65).

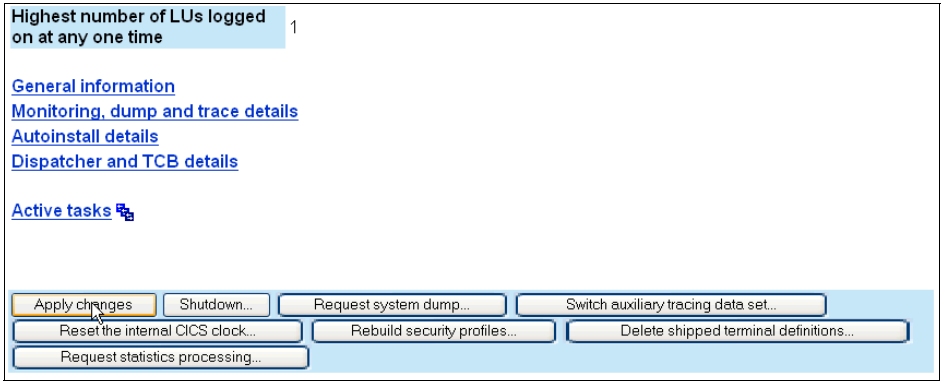


Figure 6-65 CICS region detail 2 view

You get the confirmation back that the parameter has been changed. We now want to verify that the max tasks condition has been cleared. To do this we go back to the RTA outstanding events view.

You see that PJA6 is now cleared, but PJA7, the other CICS region connected to DB2, is at MAXTASK (Figure 6-66).

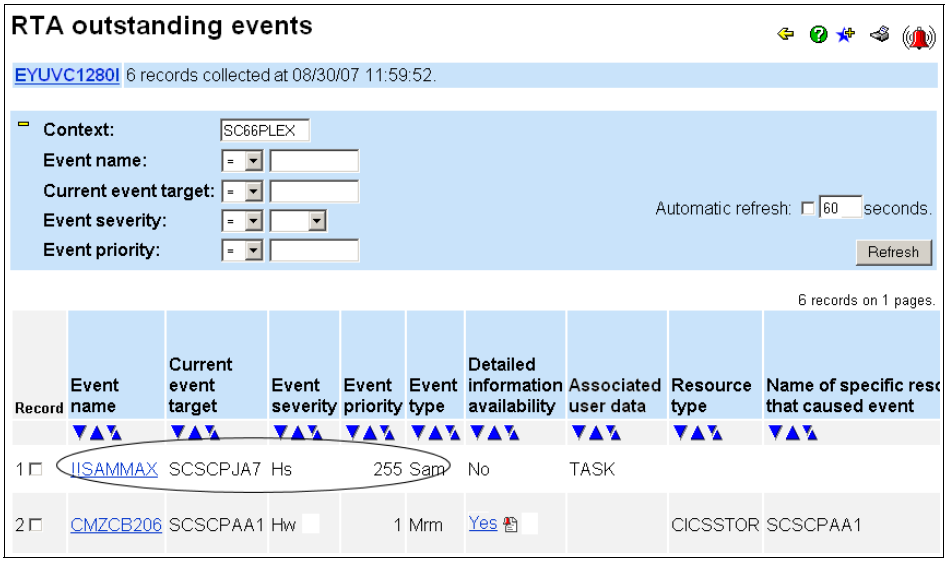


Figure 6-66 RTA shows that the other AOR is now under stress

Go back and go through the same steps for SCSCPJA7, and the Alert screen is cleared.

Let us fix the problem

The application is still up and running, though there is obviously an underlying problem that needs to be addressed. The pool thread definitions for the DB2 connections seem to be incorrect for both the regions. We now examine the DB2 connections and correct them while the application is still running. We start by going to the navigation frame and clicking the Files & DB2 toggle, then clicking the **DB2 connections** link. You should still have the scope set to CSGAOR, which provides you with the page shown in Figure 6-67.

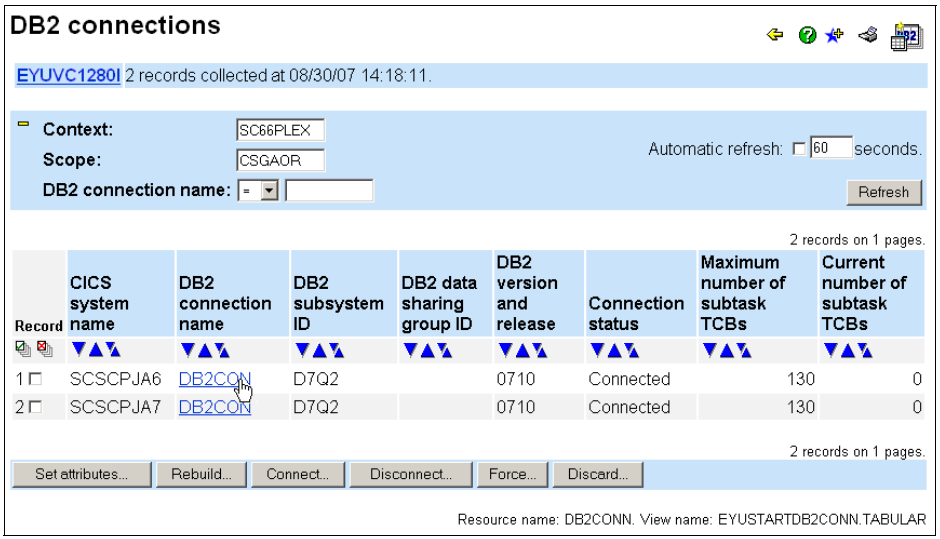


Figure 6-67 DB2 connection view with scope set to CSGAOR

We then click the hyperlink for our connection in the SCSCPJA6 region. This screen shows us detailed information about the connection (Figure 6-68 on page 372). We can see that we have enough TCBs. We have three TCBs in use (current number of subtask TCBs), and we can have up to 130 in use (maximum number of subtask TCBs). These attributes have been marked in Figure 6-68 on page 372 with arrows.

Next we examine the number of active thread pools and compare it with the maximum number of threads. We can see that both attributes are the same. Therefore no more pool threads can be created (these attributes have been highlighted by boxes in Figure 6-68 on page 372).

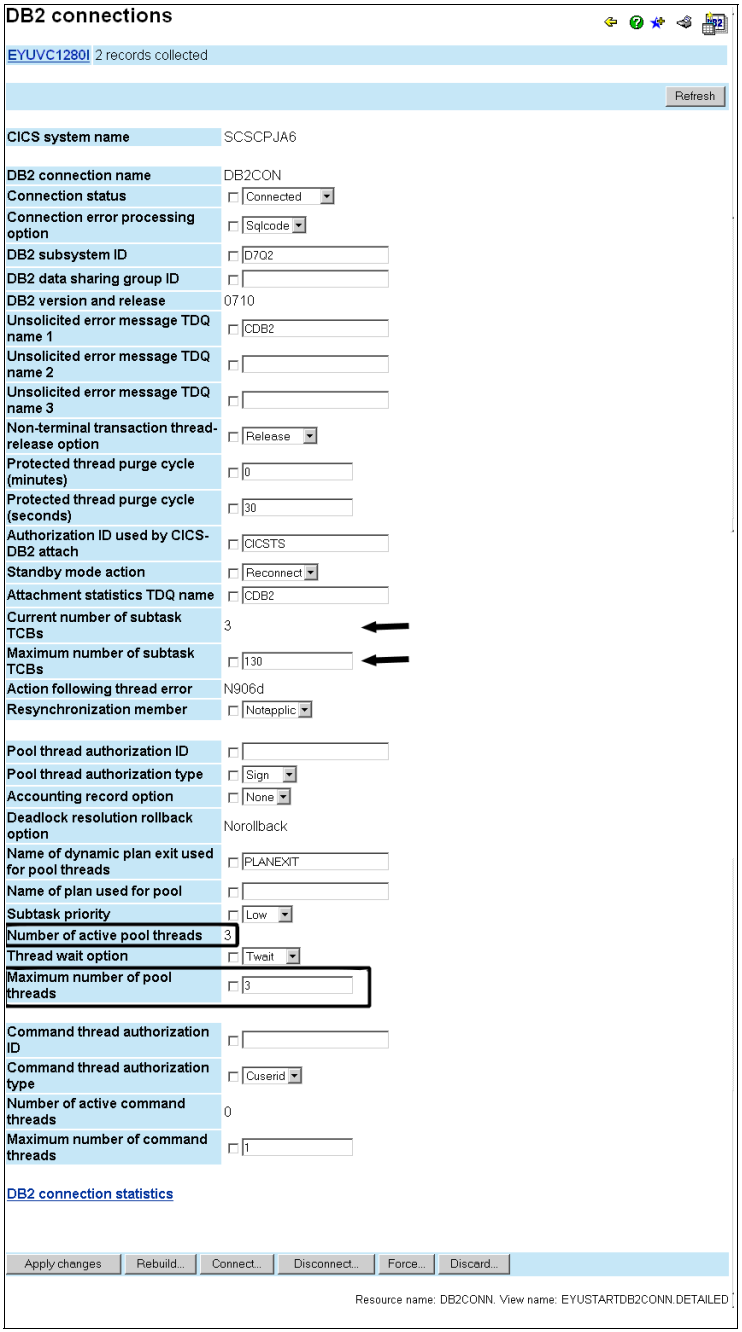


Figure 6-68 DB2 connection view before making any changes

As we have sufficient TCBs available, we change the maximum number of thread pool waits to 50. This allows more threads to be allocated and should stop tasks from having to be suspended while waiting for a thread to be available. We make this change by altering the attribute, making sure that the box beside the attribute is checked, and clicking the **Apply changes** button (Figure 6-69).

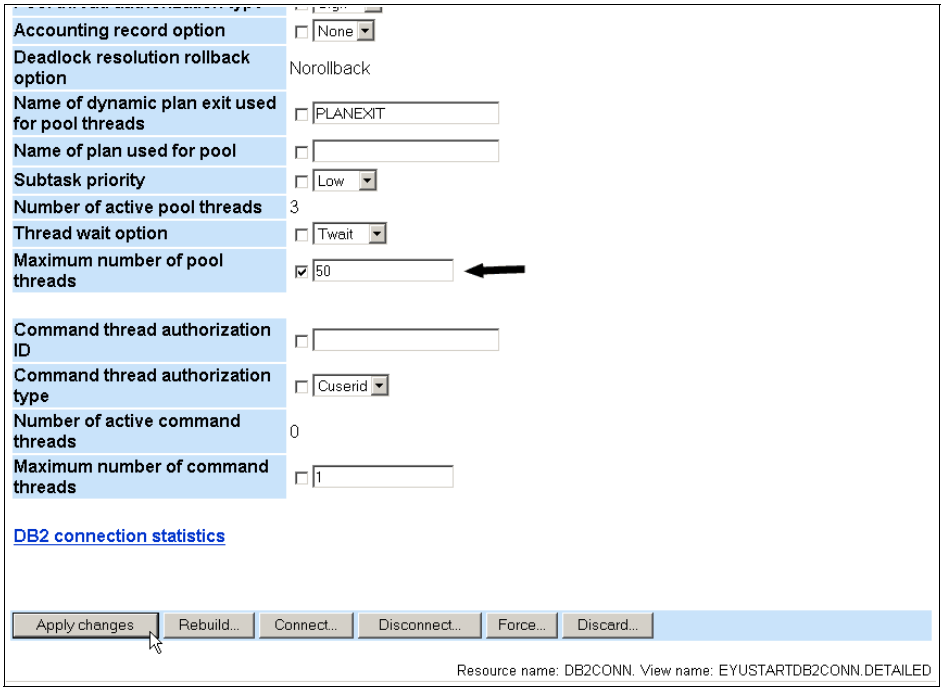


Figure 6-69 Connection changing the maximum pool thread parameter

To verify that we have fixed the problem we go back to the RTA outstanding events view to verify that the max tasks condition has been cleared.

Conclusion

You need to use CICS statistics and monitoring data to tune your DB2 environment. What you have done in this scenario is get out of a bad situation and set a baseline for tuning. The number of TCBs available is very high. This could cause *below-the-line* storage problems in the future.

When allocating your TCBs and threads, you should try both large numbers of TCBs and threads and smaller numbers of TCBs and threads. In some of our testing the pool with only a few threads outperformed a small number of dedicated threads, and during other tests large numbers of dedicated protected threads outperformed a very large pool. The bottom line is to use CICS statistics,

and in between monitoring data test various scenarios to see what works best for you. All workloads are not the same and require different settings.

The following two references are a great source of information to help you understand the CICS DB2 attachment and its setup and tuning:

- *DB2 for z/OS and OS/390 Version 7 Selected Performance Topics,* SG24-6894
- *CICS Transaction Server for z/OS CICS DB2 Guide, Version 3 Release 2,* SC34-6837

6.4 Historical Fault Diagnosis

We use a basic scenario to demonstrate how the WUI history can be used to resolve a historical problem that has already occurred.

6.4.1 The scenario

The workload being generated consists of a mix of 3270 VSAM business applications running at high volumes from TPNS terminals. The terminal workload is managed through two TORs using VTAM generic resourcing. Both TORs route to a single AOR. The AOR is running the applications and has some VSAM files defined as local. The others are defined as RLS access.

Note: It is important to remember that unlike recording facilities provided by other monitors, HISTORY data is *only* written out for the CICS regions on which the transaction actually executed, that is, AOR. This means that there is *no* record of the transaction in the TOR written out by the CPSM HISTORY agent.

Figure 6-70 gives you a high-level overview of the test system used for our test scenario.

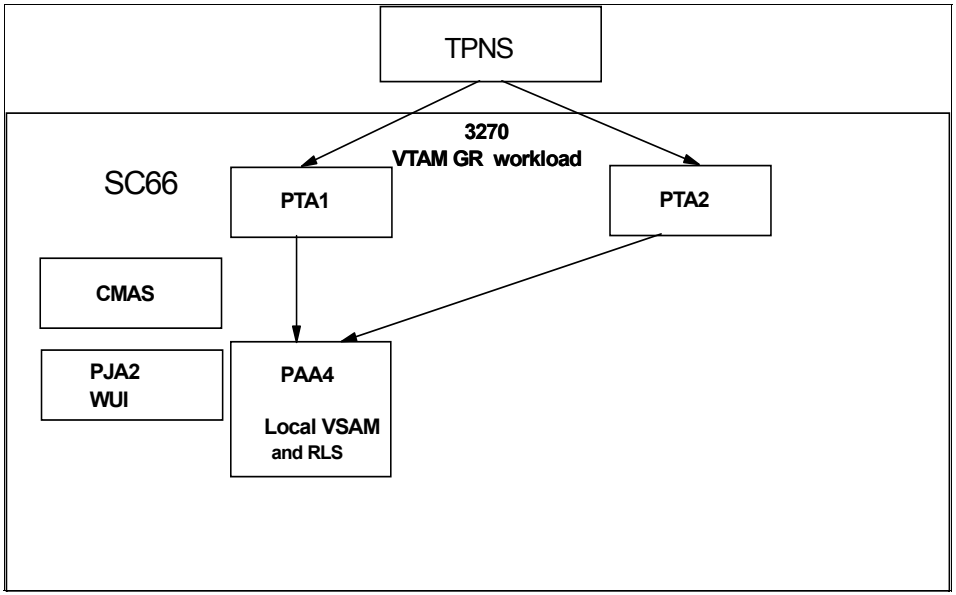


Figure 6-70 The CICSplex configuration for this scenario

6.4.2 Setting up the CICSPlex SM environment to assist in diagnosis

The first action is to confirm that he history collection is active for our AOR CICS region. This is done from the HISTORY views. If not active, then the process as specified in the migration chapter in Example 3-13 on page 80 needs to be followed.

Figure 6-71 shows that our AOR has HISTORY recording set to active.

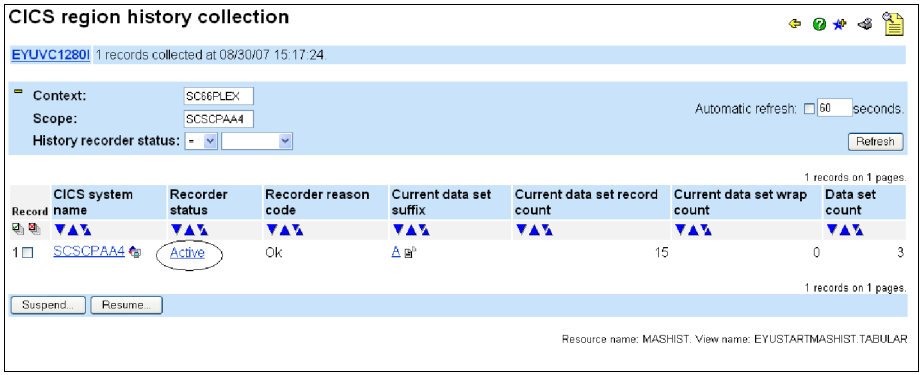


Figure 6-71 History recording active for AOR

It is also a *requirement* that a MONITOR definition be installed into the monitored CICS region. This is because the gathering of history data is ignored by default, even though history recording is active. This can be done by means of the MONITOR definitions view. We created a MONITOR definition of I*, also a MONITOR GROUP, and a MONITOR SPECIFICATION. We linked them together to be automatically installed every time the CICS region was restarted.

We then started the workflow as described in Figure 6-70 on page 375.

Let us investigate

We alter the context and scope to the required values in the Main WUI menu. In our case it was our SC66PLEX as the context, and SCSCPAA4 as our scope. Also, now select the view for **completed tasks - recent** for history.

Figure 6-72 shows the resultant set, and we now continue to select recent completed history tasks.

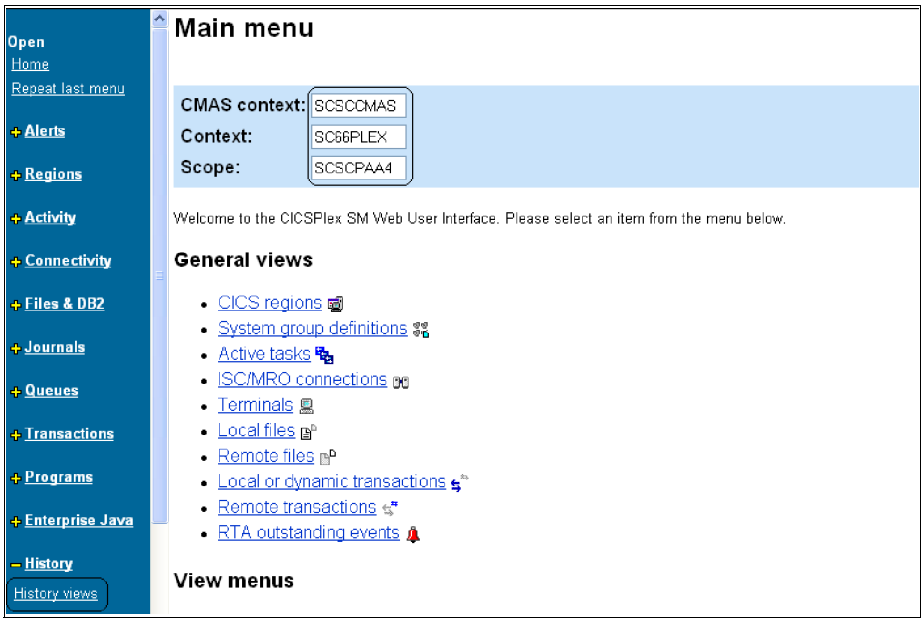


Figure 6-72 Context and scope set

Next click the **History Views** tab.

The resultant view shows all the I* transactions that have completed in our AOR SCSCPAA4.

Figure 6-73 shows the resultant view, and our selection of completed history tasks.

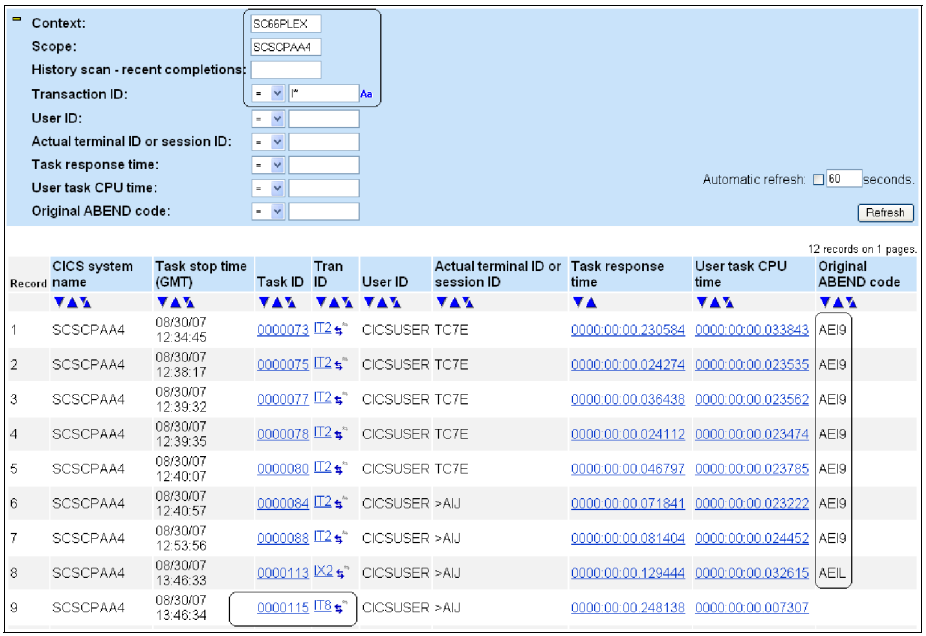


Figure 6-73 Result of History View tab

Some points of interest here are those that have been marked in Figure 6-73. Notice that some transactions have abended. Notice also that the scope and context still show our settings. We then select the transaction **IT8**, and discuss some of the information returned that could be used during problem determination.

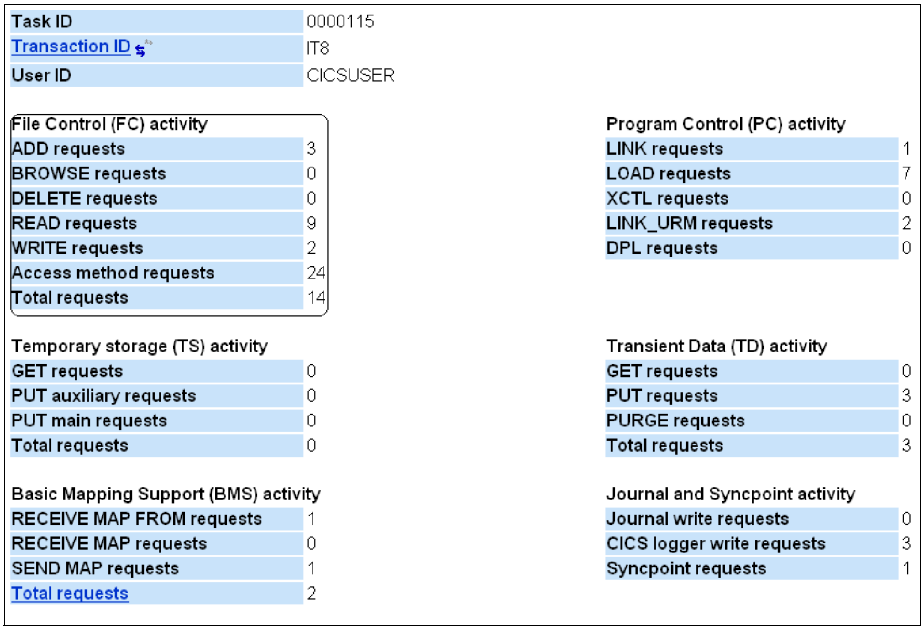
We then select task ID no 115. Notice that the originating TOR is displayed. We next select the Request Counts tab to see the file activity processed for the transaction. Figure 6-74 shows the resultant view of task ID 115.

CICS system name	SCSCPAA4
Task stop time (GMT)	08/30/07 13:46:34
Task ID	0000115
Transaction ID	IT8
User ID	CICSUSER
Facility type	Terminal
Facility ID	P411
VTAM LU name	SCSCPTA2
Transaction class	
Task status	
Task attach date and time (GMT)	08/30/07 13:46:34
Task response time	0000:00:00.248138
User task CPU time	0000:00:00.007307
Suspend time	0000:00:00.107438
Local unit of work (UOW) ID	C11FB37FDC7C3906
Original ABEND code	
Performance record type	' T'
Number of performance records	1

Figure 6-74 Result of selecting task ID

We select the **Request counts** tab for task id no 115. Notice that the Total requests field contains the sum of add, browse, delete, read, and write activities.

Figure 6-75 shows the resultant view with file control activity.



Task ID	0000115
Transaction ID	IT8
User ID	CICSUSER

File Control (FC) activity	
ADD requests	3
BROWSE requests	0
DELETE requests	0
READ requests	9
WRITE requests	2
Access method requests	24
Total requests	14

Program Control (PC) activity	
LINK requests	1
LOAD requests	7
XCTL requests	0
LINK_URM requests	2
DPL requests	0

Temporary storage (TS) activity	
GET requests	0
PUT auxiliary requests	0
PUT main requests	0
Total requests	0

Transient Data (TD) activity	
GET requests	0
PUT requests	3
PURGE requests	0
Total requests	3

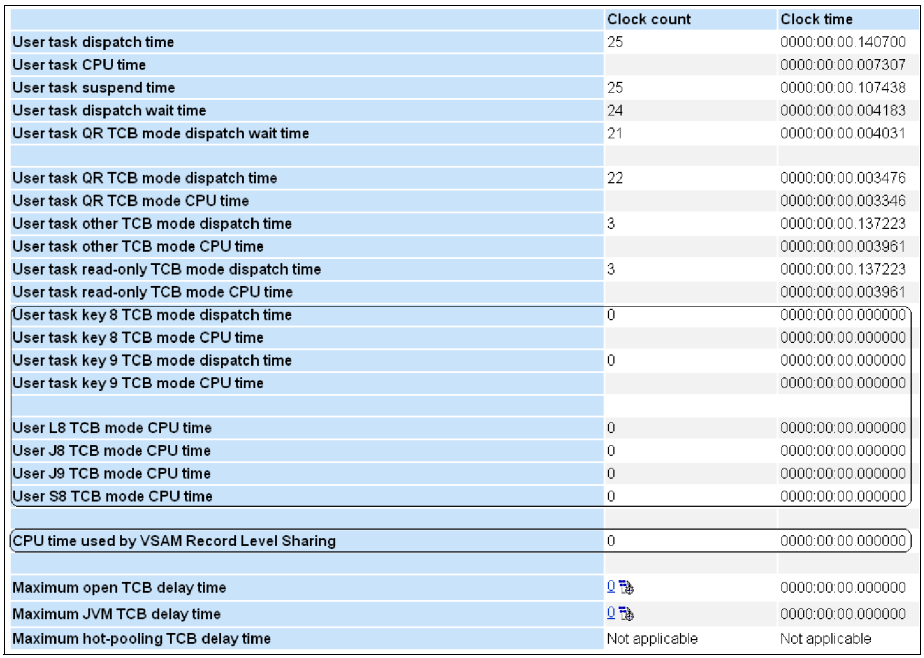
Basic Mapping Support (BMS) activity	
RECEIVE MAP FROM requests	1
RECEIVE MAP requests	0
SEND MAP requests	1
Total requests	2

Journal and Syncpoint activity	
Journal write requests	0
CICS logger write requests	3
Syncpoint requests	1

Figure 6-75 Result of selecting request counts

We now select the **CPU and TCB information** tab for task ID no 115. Notice that the L8 and L9 fields are zero. This indicates that there is no threadsafe processing being done. Also, there is no RLS file activity for this transaction.

Figure 6-76 shows the resultant view of CPU and TCB information.



	Clock count	Clock time
User task dispatch time	25	0000:00:00.140700
User task CPU time		0000:00:00.007307
User task suspend time	25	0000:00:00.107438
User task dispatch wait time	24	0000:00:00.004183
User task QR TCB mode dispatch wait time	21	0000:00:00.004031
User task QR TCB mode dispatch time	22	0000:00:00.003476
User task QR TCB mode CPU time		0000:00:00.003346
User task other TCB mode dispatch time	3	0000:00:00.137223
User task other TCB mode CPU time		0000:00:00.003961
User task read-only TCB mode dispatch time	3	0000:00:00.137223
User task read-only TCB mode CPU time		0000:00:00.003961
User task key 8 TCB mode dispatch time	0	0000:00:00.000000
User task key 8 TCB mode CPU time		0000:00:00.000000
User task key 9 TCB mode dispatch time	0	0000:00:00.000000
User task key 9 TCB mode CPU time		0000:00:00.000000
User L8 TCB mode CPU time	0	0000:00:00.000000
User J8 TCB mode CPU time	0	0000:00:00.000000
User J9 TCB mode CPU time	0	0000:00:00.000000
User S8 TCB mode CPU time	0	0000:00:00.000000
CPU time used by VSAM Record Level Sharing	0	0000:00:00.000000
Maximum open TCB delay time	0	0000:00:00.000000
Maximum JVM TCB delay time	0	0000:00:00.000000
Maximum hot-pooling TCB delay time	Not applicable	Not applicable

Figure 6-76 Result of selecting CPU and TCB information

Conclusion

It is clear that if response time problems were experienced during the historical gathering period, these could not be CICS related. We see that the transaction response times are acceptable. Included in these are the access times to and from VSAM as well as transaction routing. The transactions that have abended with AEI9 (map fail) and AEIL (file not found) abend codes can be traced further to determine the reason for these abends.

Note: It is important to note that the only method of reinitializing the history collector agent in a MAS once the CONH task has terminated abnormally, is to stop the MAS agent code in the MAS with COSH transaction, and then reinitialize with the COLM transaction.

7

Hints and tips

In this chapter we provide some hints and tips for you on varying subjects, from problems we have encountered to tips on how to use things in certain ways.

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7.1 Invalid EYUWREP key size

If you have defined your EYUWREP file with an incorrect size, you will get the following problems when you try to populate the repository with the initial VIEW and MENU screens. If you are populating using the COVC transaction in CICS then you will get the following message:

```
EYUVSO917E Import operation failed.
```

The only information given is in the EYULOG, as shown below:

```
Import 'MENU (SKIP)' initiated for user (CICSRS1) from TDQ (COVI)
```

If you specified AUTOIMPORTTDQ as the Web User Interface initialization parameter then you will get the following message in the EYULOG:

```
Import 'MENU (SKIP)' initiated for user (CICSRS1) from TDQ (COVI)
```

Example 7-1 shows the JCL required to create the EYUWREP file with the correct key size.

Example 7-1 EYUWREP cluster attributes

```
DEFINE CLUSTER (                                    -
                NAME( dsname )                       -
                VOLUMES( dsvol )                     -
                RECORDS( 5000 5000 )                 -
                RECORDSIZE( 8192 32000 )             -
                CONTROLINTERVALSIZE( 8192 )          -
                SPANNED                              -
                INDEXED                              -
                KEYS( 20 20 )                        -
                SHAREOPTIONS( 2 )                    -
               )
```

7.2 Invalid DFHTEMP size

If the DFHTEMP data set has been defined with an incorrect size, you get the following problems when you try to import views, menus, user groups, users, and maps. If you are performing the import using the COVC transaction in CICS, then you get the following message:

```
EYUVSO917E Import operation failed.
```

The following message is shown in the EYULOG:

```
EYUVS1068E Import of resources failed. The CICS temporary data set is full.
```

Example 7-2 shows the JCL required to create a DFHTEMP of the correct size to import the IBM-supplied views and menus.

Example 7-2 DFHTEMP cluster attributes

```
DEFINE CLUSTER (                                -
                NAME( dsname )                  -
                VOLUMES( dsvol )                -
                RECORDS( 200 200 )              -
                RECORDSIZE( 4089,4089 )         -
                CONTROLINTERVALSIZE( 4096 )     -
                NONINDEXED                      -
                SHAREOPTIONS( 2 3 )             -
              )
```

7.3 INACTIVETIMEOUT parameter

Be aware that the default for this parameter is 30 minutes, so once an individual user's Web User Interface session has been inactive for 30 minutes, the inactive user sessions are terminated. This can cause problems if, for instance, the user was in the middle of creating a particular view or favorite, as everything that has been done and not saved will be lost.

For more information about this WUI system parameter see the *CICS Transaction Server for z/OS CICSPlex SM Web User Interface Guide, Version 3 Release 2,* SC34-6841.

7.4 MASes fail to connect to the local CMAS at startup

When a MAS initiates a connection to its local CMAS, the name of the CICSplex (acquired from the PLEXNAME() EYUPARM parameter) and optionally the name of the CMAS (in the CMASSYSID() EYUPARM) is passed in the parameter list to the Environment Service System Services (ESSS) subsystem. The ESSS subsystem posts the Initial Contact Transient in the target CMAS. (The target CMAS is the CMAS identified by the CMASSYSID() parameter, if specified, or the CMAS that connected to the ESSS subsystem on the host MVS image most recently.)

If the name of the CICSplex or the SYSID of the CMAS is not registered, the ESSS fails the connection without posting the CMAS. Therefore, no messages appear in the CMAS job log or EYULOG. However, the MAS agent continues to retry the connection, as the desired CICSplex or CMAS may register with the ESSS at any time. If the MASPLTWAIT(YES) parameter was specified in the

MAS EYUPARM file, the CPSM PLT program waits for the interval specified or defaulted in the MASINITTIME() EYUPARM. The PLT program then issues the message:

```
EYUXL0090W SCSCPLA1 PLT Processing continuing while MAS Agent waits to connect
to ESSS Subsystem
```

MAS initialization does not complete until the MAS agent connects to the ESSS subsystem.

Enter the COSH transaction to terminate the MAS agent. Then correct the errors in the MAS EYUPARM file and enter the COLM transaction to restart the MAS agent.

7.5 MAS initialization times out with message EYUNL0090W

When a MAS initiates a connection to its local CMAS, the topology long-running task in the CMAS is posted to begin the topology connect process. When topology connect completes, a method argument list (MAL) is sent to the MAS to start the MAS heartbeat task. If the MAS heartbeat task has not started in the interval specified or defaulted for the MASINITTIME() parameter, the MAS agent terminates after issuing the message:

```
EYUNL0090W SCSCPJA2 is shutting down because it failed to become available to
process requests
```

1. Examine the CMAS job log and EYULOG for messages indicating that topology connect did not complete normally. If topology connect fails, the message to start the MAS heartbeat task is not sent, and the MAS agent eventually times out. Correct any problems and restart the MAS agent using the COLM transaction.
2. If no messages appear in the CMAS job log or EYULOG indicating that a problem occurred during topology connect, determine whether BAS is being used to install CICS resources in the MAS at initialization. The exact number of resources that can be installed in the ten-minute default MASINITTIME interval depends on a number of factors, including processor speed and the types of resources being installed. However, installing large resource sets (that is, several thousand resources) may require that MASINITTIME be increased from the default of 10 minutes.
3. If BAS is not being used, or the number of resources being installed at initialization is small, verify that the CMAS is defined to MVS service class SYSSTC. If the CMAS does not run at a higher dispatching priority than MASes in the same MVS image, it may not be able to process requests from connected MASes (for example, topology connect) in a timely fashion. Ensure

that the CMAS is defined to MVS service class SYSSTC and stop and restart the CMAS.

7.6 Problems setting up SSL security

In this section we discuss problems setting up SSL security.

7.6.1 WUI server initialization failed and the region terminated

The following messages are issued in the job log:

```
DFHAM4889 E SCSCPJA2 Install of TCPIPSERVICE EYUWUI failed because CERTIFICATE
SCSCPJA2-WEB-SERVER is invalid.
EYUVS0005S SCSCPJA2 CICSPlex SM Web User Interface initialization failed. (CICS
Web Interface initialization.)
EYUVS0004I SCSCPJA2 CICSPLEX SM WEB USER INTERFACE TERMINATION COMPLETE.
```

Following these messages, the CICS region terminates.

Ensure that the label of the certificate identified in the EYUWUI parameter TCPIPSSLCERT() is not longer than 32 characters and does not contain any lower-case characters.

7.6.2 Creation of EYUWUI TCPIPSERVICE fails

The following messages appear in the WUI server's job log:

```
DFHPA1909 SCSCPJA2 DATA WEBSERVER.SCSCPJA2 IS INVALID FOR KEYWORD KEYRING=.
RESPECIFY KEYWORD AND DATA.
      .
      .
      .
DFHAM4905 E SCSCPJA2 Install failed for EYUWUI. Option SSL(YES) is not
available on this system.
```

Ensure that the CICS region user ID, not the default user ID, was used to create the key ring and certificates.

Ensure that the region user ID has been granted READ access to resources IRR.DIGTCERT.LISTRING and IRR.DIGTCERT.* in class FACILITY.

7.7 Handling large amounts of output from WUI views

Sometimes the output from WUI views produces large amounts of output, for example, displaying transactions or displaying files. It is only then possible to scroll one page at a time on your screen, which is a very slow process. WUI has another function for handling large amounts of output. The function is called the print preview function. The WUI print preview function puts the output in one continuous WUI view. When using the print preview, it is possible to then edit (by copying the text to the clipboard), print, browse, and use the **`find`** command without page breaks.

Looking at Figure 7-1we see at the top of the view the warning message telling us that a large amount of output may be returned. The message states that running the query may produce 1217 records.

1. Click the **OK** button to proceed with the query.

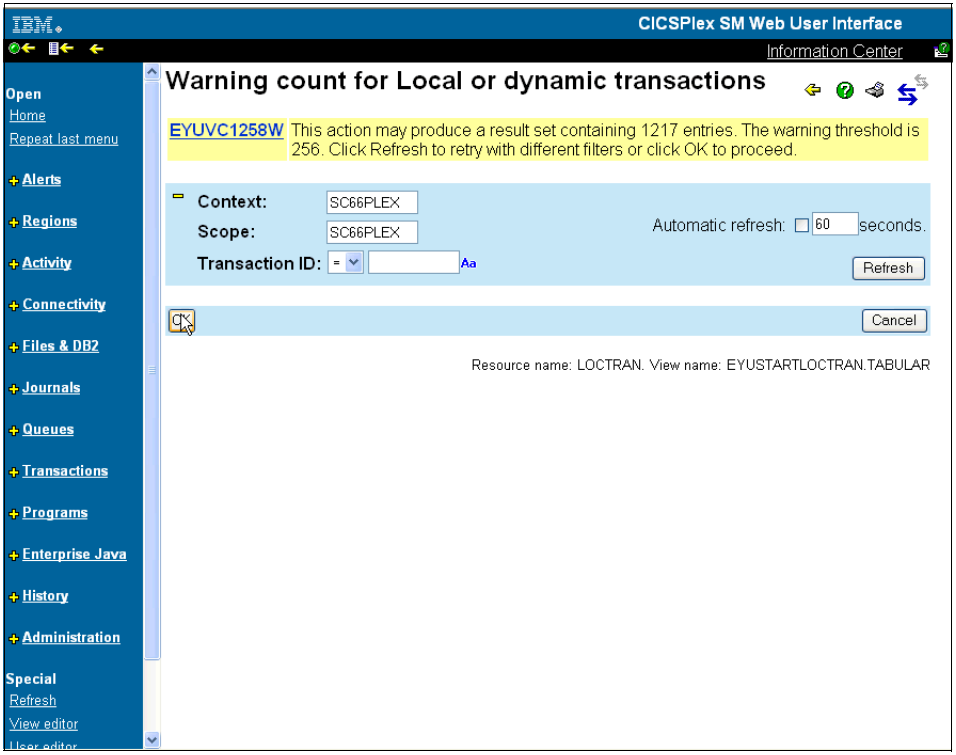

Figure 7-1 WUI displaying a warning count for transactions

2. To display a print preview screen, click the printer icon located at the top right corner of the view (Figure 7-2).

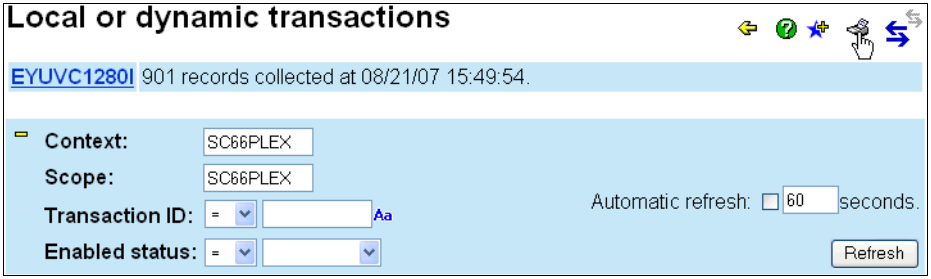

Figure 7-2 WUI print preview icon

This produces all of the lines (901 lines) into one continuous view (Figure 7-3) without page breaks. Note that the number of records actually collected differs from the number of records on the warning count. This can happen when resources have been discarded, or a CICS system is shut down, in between the warning being displayed and you clicking the **OK** button.

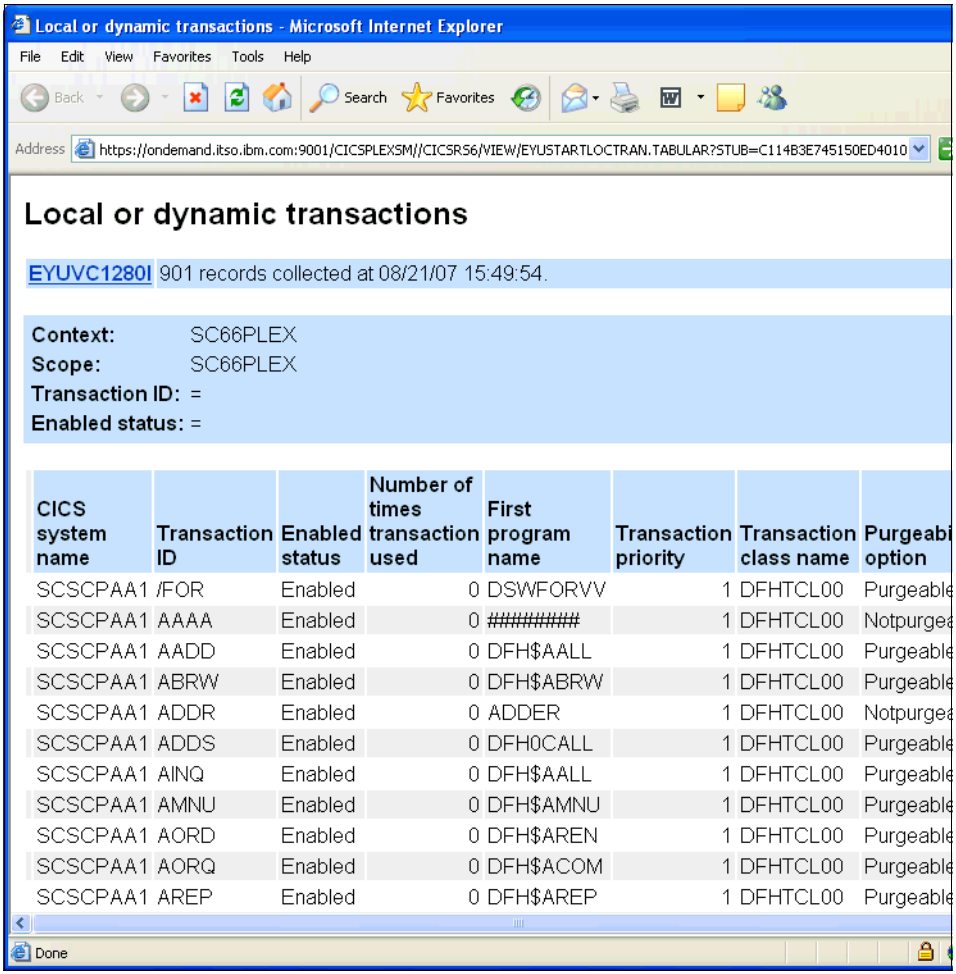

Figure 7-3 WUI print preview view

After using the print preview icon, we can now use other functions like the **`find`** command, and edit, print, or browse command, just like using a normal text editor.

An example of using the find command is shown in Figure 7-4 on page 391. Here we click **Edit** and then the find command, looking for example DSNC.

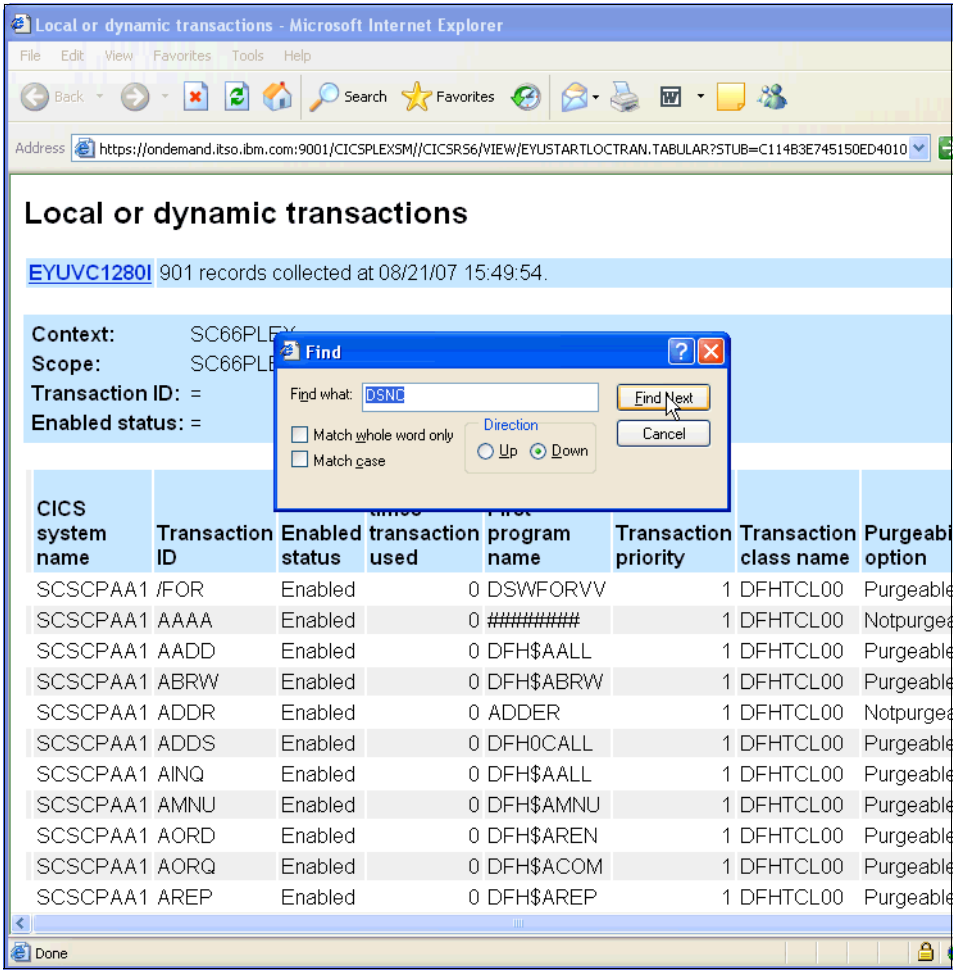

Figure 7-4 WUI print preview and usage of the find command

7.8 History recording

The history facility is directly linked to monitoring. This implies that the history collector agent uses the PERIODEF parameter for RTA and MON for writing records to the history data set.

Example 7-3 shows the messages displayed in the MAS log confirming the starting or suspending of history collection.

Example 7-3 Messages displayed

```
00.00.00 STC12015 ---- SUNDAY,    02 SEP 2007 ----
00.00.00 STC12015  +DFHIC0801 SCSCPAA4 CICS time altered from 24.00.000 to
00.00
04.00.02 STC12015  +EYUNL0171I SCSCPAA4 History Recorder has been terminated.
09.00.00 STC12015  +EYUNL0170I SCSCPAA4 History Recorder has been activated.
17.00.02 STC12015  +EYUNL0171I SCSCPAA4 History Recorder has been terminated.
22.00.00 STC12015  +EYUNL0170I SCSCPAA4 History Recorder has been activated.
00.00.00 STC12015 ---- MONDAY,    03 SEP 2007 ----
00.00.00 STC12015  +DFHIC0801 SCSCPAA4 CICS time altered from 24.00.000 to
00.00
04.00.02 STC12015  +EYUNL0171I SCSCPAA4 History Recorder has been terminated.
09.00.00 STC12015  +EYUNL0170I SCSCPAA4 History Recorder has been activated.
17.00.03 STC12015  +EYUNL0171I SCSCPAA4 History Recorder has been terminated.
22.00.00 STC12015  +EYUNL0170I SCSCPAA4 History Recorder has been activated.
```

As we can see, the history recorder was terminated and restarted at specific times. Looking then at the PERIODEF (Figure 7-5), it is obvious that these times were actioned accordingly. Therefore, if history data is required, be mindful of the fact that monitoring *must* be active.

Figure 7-5 shows the PERIODEF set for monitoring to take place, thus influencing history collection.

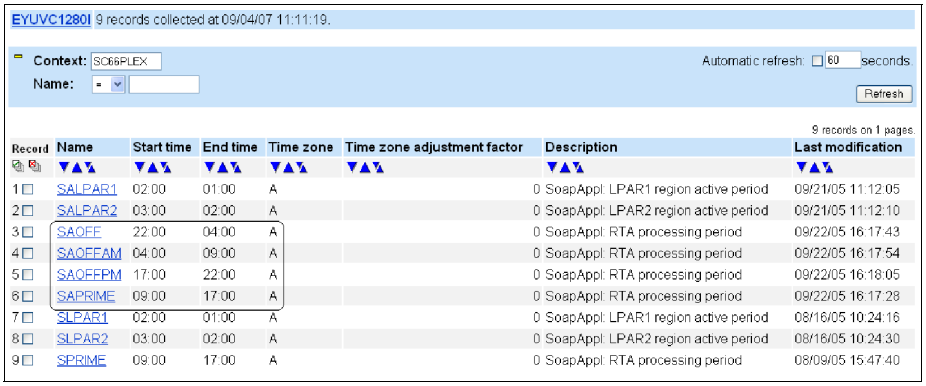

Figure 7-5 Shows the PERIODEF view

8

Security

In this chapter we discuss the ability of CICSPlex SM to protect enterprise data. CICS allows customers to control access to commands and resources within a region, and provides a secure means of transmitting information to clients over TCP/IP connections. CICSPlex SM and the Web User Interface (WUI) take advantage of these facilities within CICS, and add another layer of security, controlling the user's ability to request data or perform actions through CICSPlex SM, and to access objects (view sets, menus, and help members) in the WUI, the view editor, and the user editor.

In the following sections we cover:

- Control access to WUI resources: menus, views, and view editor
- Control access to CICSPlex SM resources, CPSMOBJ resource class
- Control access to CICS resources - simulating CICS security
- Secure transmission of data - SSL and Web User Interface

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8.1 Control access to WUI resources: menus, views, and view editor

Basic security in the CICSPlex SM Web User Interface is described in *CICS Transaction Server for z/OS CICSPlex SM Web User Interface Guide, Version 3 Release 2,* GC34-6841. Access to objects in the WUI itself is controlled by profiles in the FACILITY class. The general form for WUI resource names is:

- EYUWUI.server_applid.object_class.object_name
- EYUWUI.server_applid.EDITOR

Where:

- server_applid is the specific or generic CICS APPLID of the WUI server.
- object_class is the WUI object class (VIEW, MENU, HELP, USER, EDITOR). EDITOR is a special object class that controls access to the view editor.
- object_name is the specific or generic name of a view set, menu, help member, or user or group definition.

Note: UGRP controls access to USER groups and it has no object_name qualifier. Likewise, USER has no object_name qualifier.

Access to the USER profile controls both access to the USER editor and the ability to import USER objects via COVC.

Note: This security applies to the WUI view sets and menus themselves. The CICSPlex SM and CICS resources that are displayed by the WUI are protected by normal CICSPlex SM and CICS security.

Granting READ access to view sets, menus, or help members allows users to access the objects through the main WUI interface. It also allows users to export view sets and menus using the COVC transaction, and to copy view sets or menus in the view editor.

Granting UPDATE access to view sets, menus, and help members allows users to create, modify, or delete objects using the view editor, and to import view sets and menus using the COVC transaction. Note that you must have UPDATE access to the EDITOR resource as well as to the objects you are editing to use the view editor to create, update, or delete view sets or menus.

If you try to open a view in a view set or menu for which you do not have READ access, you receive message EYUVC1210E. In the view editor, view sets and menus do not appear in selection lists unless you have sufficient authority to

access them (READ to copy, UPDATE to edit). No security logging is performed when browsing to generate selection lists, but message EYUVS1100E will be written to the EYULOG for every attempt to open a view set or menu to which you do not have access, or to create a new object with a name that you are not authorized to access.

8.2 Control access to CICSPlex SM resources, CPSMOBJ resource class

When a user requests data or performs an action through the TSO end user interface (EUI), the Application Programming Interface (API), or the Web User Interface, the ability to perform the function is validated against the CICSOBJ resource class. Resource names are constructed as follows:

- function.type.context
- function.type.context.scope

Where:

- Function is the name of the CICSPlex SM function being requested.
- Type is the full or generic name of a specific action or resource available under the function.
- Context is the full or generic name of the CMAS (if the function is CONFIG or TOPOLOGY) or CICSplex (for all other functions) to which the request is directed.
- Scope is the full or generic name of a CICS region to which the request is directed. For administrative resources (for example, where the context is a CMAS or the type is DEF), scope is not allowed.

Note: Before defining generic resource profiles, generics must be activated for the CPSMOBJ resource class by entering the following command:

```
SETROPTS GENERIC(CPSMOBJ)
```

The following tables describe the functions and types used by CICSPlex SM to build resource names. See *CICS Transaction Server for z/OS RACF Security Guide, Version 3 Release 2,* GC34-6835, for further information about how resource names are constructed.

Table 8-1 Function descriptions

Function	Resource usage
ANALYSIS	Real-time analysis (RTA) component

Function	Resource usage
BAS	Business application services (BAS) component
CONFIG	CMAS configuration
MONITOR	Monitor (MON) component
OPERATE	CICS operations resources
TOPOLOGY	CICSplex configuration
WORKLOAD	Workload Manager (WLM) component

Table 8-2 Type descriptions

Type	Resource description
AIMODEL	CICS autoinstall models
BRFACIL	Link3270 bridge facility
CONNECT	CICS connections
DB2DBCTL	DB2/DBCTL resources and subsystems
DEF	CPSM resource definitions
DOCTEMP	CICS document templates
ENQMODEL	CICS global enqueue models
ENTJAVA	CICS CorbaServers and deployed DJARs
EXIT	CICS user exits
FEPI	CICS FEPI resources
FILE	CICS files
IPCONN	IPIC connections
JOURNAL	Journal models
PARTNER	CICS partners
PROCTYPE	CICS BTS process types
PROFILE	CICS profiles
PROGRAM	CICS programs
REGION	CICS region data
RQMODEL	CICS request models

Type	Resource description
TASK	Active CICS tasks
TCPIPS	CICS TCP/IP services
TDQUEUE	CICS transient data queues
TERMINAL	CICS terminals
TRAN	CICS transactions
TSQUEUE	CICS temporary storage queues
UOW	CICS units of work

Thus, a CICS operator might be granted permission to access CICSPlex SM monitor and operate views and RTA event views for all regions in the production CICSplex, and to modify resources in CICS regions. The following resource profiles and permissions are needed; see Example 8-1.

Example 8-1 Security for CICS operators

```
RDEF CPSMOBJ MONITOR.*.PRODPLEX.* UACC(NONE) OWNER(CICSADM) NOTIFY(AUDITOR)
RDEF CPSMOBJ OPERATE.*.PRODPLEX.* UACC(NONE) OWNER(CICSADM) NOTIFY(AUDITOR)
RDEF ANALYSIS.DEF.PRODPLEX UACC(NONE) OWNER(CICSADM) NOTIFY(AUDITOR)
PERMIT MONITOR.*.PRODPLEX.* CLASS(CPSMOBJ) ID(CICSOPS) ACCESS(READ)
PERMIT OPERATE.*.PRODPLEX.* CLASS(CPSMOBJ) ID(CICSOPS) ACCESS(UPDATE)
PERMIT ANALYSIS.DEF.PRODPLEX CLASS(CPSMOBJ) ID(CICSOPS) ACCESS(READ)
```

Note: While we define our security requirements in terms of what views or actions we want the operator to be able to access, CICSPlex SM resource profile names are based on the actual CICSPlex SM resource tables being retrieved. Thus, the same resource profiles are used regardless of whether the operator uses the EUI or WUI or runs programs calling the CICSPlex SM API.

People in the quality control group responsible for promoting applications from the quality assurance environment into production have a much different (and more limited) set of requirements. They require the ability to update and install BAS resource definitions and to perform a NEWCOPY or PHASEIN action on PROGRAM resources. The following resource profiles and permissions might be defined for this function; see Example 8-2.

Example 8-2 Security for users in quality control group

```
RDEF CPSMOBJ BAS.*.QUALPLEX.* UACC(NONE) OWNER(CICSADM) NOTIFY(AUDITOR)
RDEF CPSMOBJ BAS.*.PRODPLEX.* UACC(NONE) OWNER(CICSADM) NOTIFY(AUDITOR)
```

```
RDEF CPSMOBJ OPERATE.PROGRAM.PRODPLEX.* UACC(NONE) OWNER(CICSADM)
NOTIFY(AUDITOR)
PERMIT BAS.*.QUALPLEX.* CLASS(CPSMOBJ) ID(QUALGRP) ACCESS(ALTER)
PERMIT BAS.*.PRODPLEX.* CLASS(CPSMOBJ) ID(QUALGRP) ACCESS(ALTER)
PERMIT OPERATE.PROGRAM.PRODPLEX.* CLASS(CPSMOBJ) ID(QUALGRP) ACCESS(UPDATE)
```

8.3 Control access to CICS resources - simulating CICS security

While the CPSMOBJ resources allow us to control access to CICSPlex SM resource tables, another level of security is required to control access to specific resources in running CICS regions. CICS controls access to these resources, but data collection and action requests in MASes are executed by CICSPlex SM tasks, which run under a privileged user ID. CICSPlex SM can simulate CICS command and resource security checking. This allows the managing CMAS to use the same resource definitions and permissions that are used by the CICS regions themselves to manage access to resources.

CICSPlex SM can simulate both command and resource security checking. If simulated security checking is active, when a CICS region connects to a CMAS the CMAS builds a structure describing the security characteristics of the CICS region. When a request to retrieve data or perform an action is processed in the CMAS and simulated command security checking is active, the request is validated *by the CMAS* against the same resource classes (CCICSCMD or user-defined classes) that are used for validation in the target region. For actions against specific resources (for example, a request to close a file), the request is also validated against the appropriate resource classes for the resource type. If the request would be denied by CICS security in the region, it is not sent for execution. If the request passes the command (front-end) security check it is sent to the CICS region for execution. After the completed request has been returned to the CMAS, if simulated resource security checking is active, the requestor's ability to access each resource in the returned result set is checked. The result is exactly the same as though the user had executed a transaction performing the same function directly in the CICS region.

Simulated security checking allows the same control over access to CICS resources by CICSPlex SM users that is enforced for users signed on to the region directly. If simulated security checking is active, a security administrator does not need to take any special actions to control access to CICS resources through CICSPlex SM. There might also be a small benefit in performance in the managed regions, since requests that are denied by the front-end security validation in the CMAS are not sent to the region for execution.

Simulated security checking is controlled by attributes of the CPLEXDEF (CICSplex definition) resource for all CICS regions belonging to a CICSplex. In addition to controlling whether command and resource security will be simulated, the administrator can control whether certain users (for example, the user ID under which the site's automated operations package execute) may be exempted from simulated security checking. Exemptions are granted by defining resources in resource class CPSMXMP and granting user IDs that should be exempt from CICS resource checking access to those resources. The following definitions might be used to allow the automated operations user ID to perform actions on CICS resources via the CICSPlex SM API without simulated security checking.

Example 8-3 Exemption from simulated security checking

```
RDEF CPSMXMP OPERATE.** UACC(NONE) OWNER(CICSADM)
PERMIT OPERATE.** CLASS(CPSMXMP) ID(AUTOOPS) ACCESS(UPDATE)
```

Note: CPSMXMP exempts specific user IDs from simulated security checking by CICSPlex SM. It does not prevent validation against the CPSMOBJ resource class, nor does it prevent checking against CICS resource classes for functions invoked directly, for example, by EXCI calls.

Figure 8-1 shows how simulated security checking and exemption checking are controlled in the CICSplex.

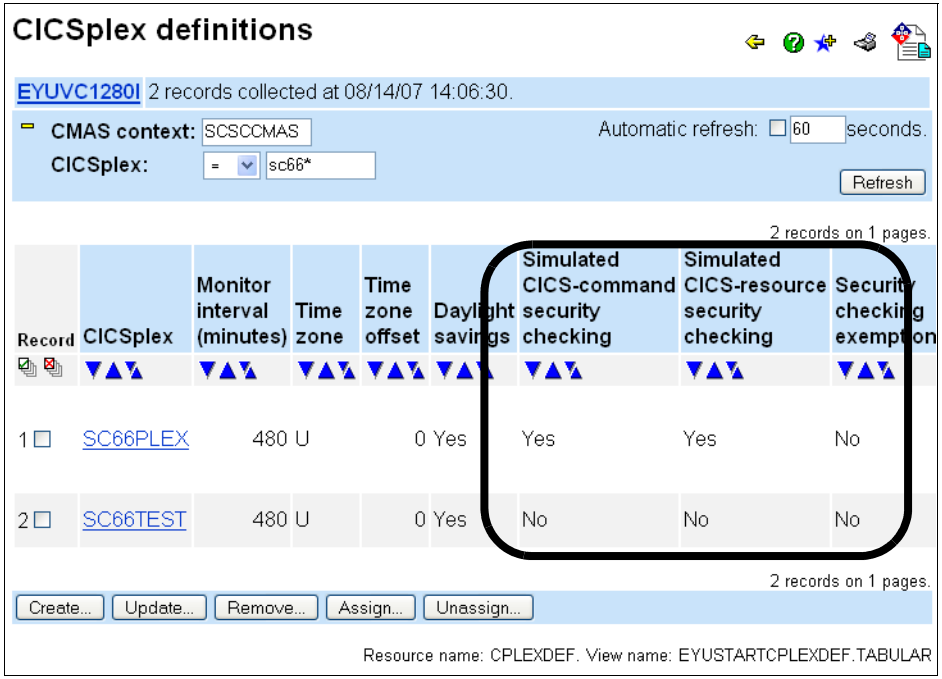

Figure 8-1 EYUSTARTCPLEXDEF view showing simulated security controls

The defaults established for the CICSplex can be overridden for single CICS regions by the CSYSDEF (CICS system definition) resource. Control of simulated security checking can be inherited from the owning CICSplex, or simulated security checking and exemption checking can be turned on or off independently. Figure 8-2 shows how the default options for simulated security checking established in the CICSplex definition can be modified for individual CICS regions.

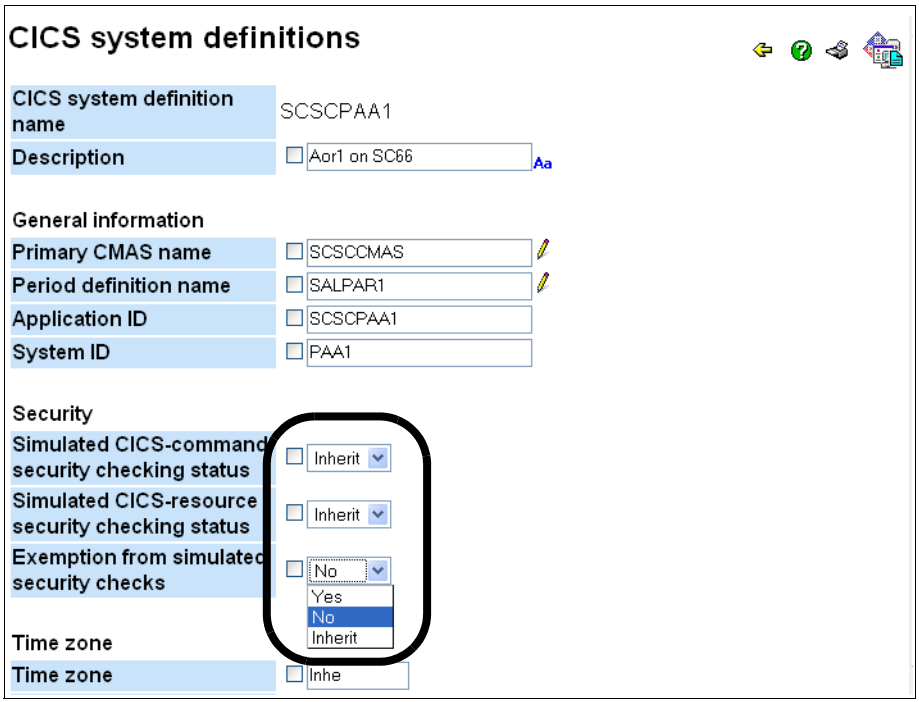

Figure 8-2 EYUSTARTCSYSDEF view showing simulated security controls

In addition, simulated security checking and exemption checking can be turned off or on in running CICS regions through the MAS resource. Changes made through the MAS resource table affect the current execution of the region only. When the region is restarted, the state of simulated security is determined by the values contained in the CPLEXDEF and CSYSDEF resource tables. Figure 8-3 on page 402 shows how simulated security checking can be turned off or on in a running CICS region.

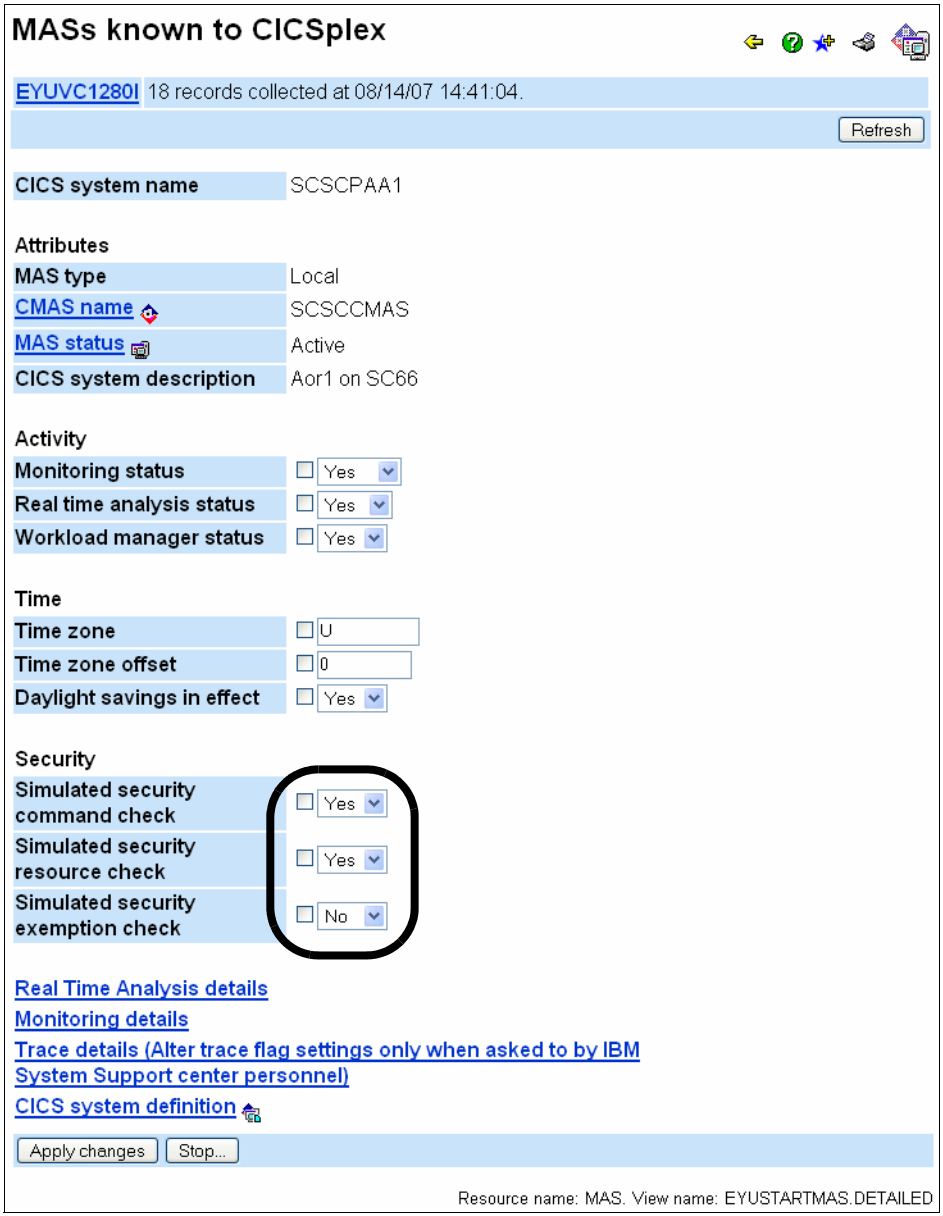

Figure 8-3 EYUSTARTMAS view showing simulated security controls

8.4 Secure transmission of data - SSL and Web User Interface

When access to CICSPlex SM was limited to real or emulated 3270 terminals through statically defined networks, maintaining the security and integrity of data between the host and the user's terminal was the responsibility of the network transmission control software. However, the CICSPlex SM Web User Interface allows users, connecting directly to server software running in a CICS region from clients connected to the host through TCP/IP networks by way of nodes that may not be under the enterprise's control, to view and act upon resources in multiple CICSplexes. CICS supports Secure Sockets layer (SSL) V3.0 and Transport Layer Security (TLS) V1.0, both generically known as SSL, to maintain both the security and the integrity of transmissions between the WUI server and the client (for example, a user's Web browser supporting SSL).

In this section we explore the process of activating SSL in the WUI server and establishing a secure connection from a Web browser running in our desktop workstation.

8.4.1 Prepare the CICS region

To enable SSL sessions for the region we must first activate CICS security. Before CICS security is enabled in the WUI server, the user must provide a user ID for identification, but a password is not required, and the provided ID is not validated by RACF®.

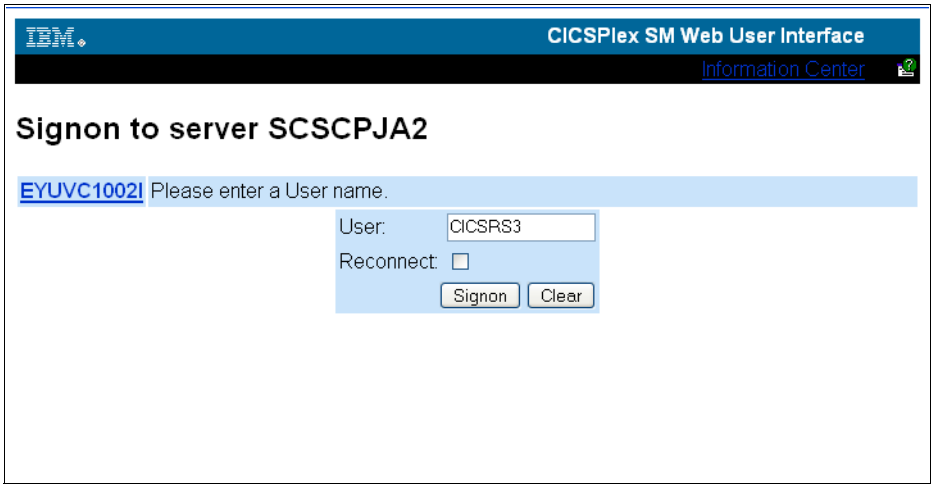

Figure 8-4 Unsecured WUI signon window

Example 8-4 SIT parms for a secured CICS region

```
SEC=YES,                        Enable CICS security
SECPRFX=SCSCPJA2,               Define security prefix
XTRAN=YES,                      Secure access to transactions
XUSER=YES                       Surrogate user checking active
```

Since the WUI server does not host any applications, we are not concerned with protecting most CICS resources. However, we do protect transactions to prevent unauthorized users from starting transactions in the WUI server. We also need to enable surrogate user checking, and to define resource profiles and permissions allowing the global server task to start transactions on behalf of individual WUI users.

Restriction: Before starting a MAS with SEC=YES in the SIT parameters, the CMAS to which it attaches must have CICSPlex SM security enabled by specifying SEC(YES) in the EYUPARM file.

Example 8-5 Sample SURROGAT profile for a WUI user

```
RDEFINE SURROGAT wui_user.DFHSTART UACC(NONE)
PERMIT cicsts.DFHSTART CLASS(SURROGAT) ID(SYS1) ACCESS(READ)
SETROPTS RACLIST(SURROGAT) REFRESH
```

Once the WUI server is started with SEC=YES, the user sign-on window requires a valid user ID and password to initiate a WUI session.

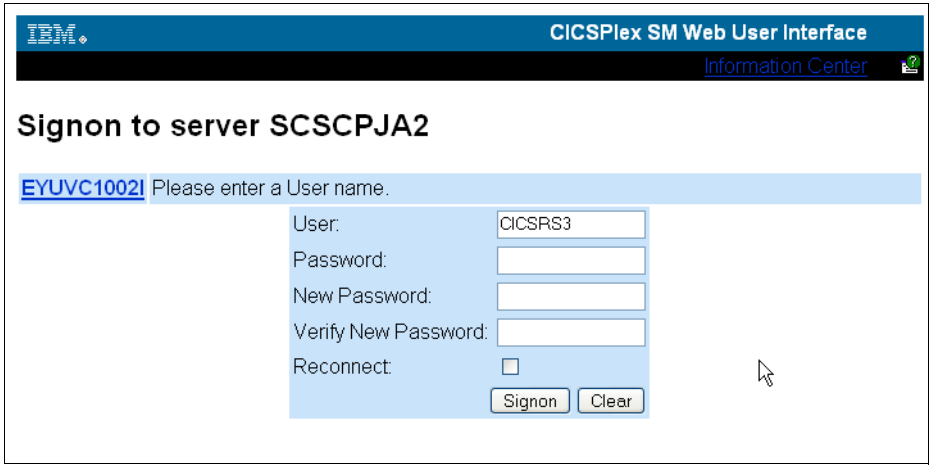

Figure 8-5 Secured WUI signon window

8.4.2 Build the key ring

Next we must define a key ring in the RACF database, containing the X.509 digital certificates and public and private encryption keys for the WUI server. The sample DFH$RING clist from library CICSTS32.CICS.SDFHSAMP cannot be used as is because it builds certificates with mixed case labels. However, we can copy the clist to a private library and make the necessary changes to generate uppercase labels, or we can enter the required RACDCERT commands directly. The job to build the key ring is shown in Example 8-6.

Note: In CICS, the required server certificate and related information about certificate authorities are held in a key ring in the RACF database. The key ring contains your system's private and public key pair, together with your server certificate and the certificates for all the certificate authorities that might have signed the certificates you receive from your clients.

Before you can use SSL with CICS you need to create a key ring that contains a private and public key pair, and a server certificate.

The RACDCERT command installs and maintains public key infrastructure (PKI) private keys and certificates in RACF. RACF supports multiple PKI private keys and certificates to be managed as a group. These groups are called key rings.

Example 8-6 Job to create the key ring in a batch terminal monitor program

```
//CICSRS5R JOB ,CLASS=A,MSGCLASS=X,NOTIFY=&SYSUID
//*
//RUNTSO   EXEC PGM=IKJEFT01,REGION=6M
//SYSTSPRT DD SYSOUT=*
//SYSTSIN  DD *
RACDCERT CERTAUTH GENCERT +
  SUBJECTSDN(CN('ITSO CPSM WUI REDBOOK CERTIFICATION AUTHORITY') +
             OU('ITSO') +
             O ('IBM') +
             L ('DURHAM') +
             SP('NORTH CAROLINA') +
             C ('USA')) +
  NOTBEFORE(DATE(2005-01-01) TIME(00:00:00))+
  NOTAFTER (DATE(2014-12-31) TIME(23:59:59))+
  WITHLABEL('CPSM-WUI-CERT-AUTHORITY')+
  SIZE(768)

 RACDCERT CERTAUTH EXPORT(LABEL('CPSM-WUI-CERT-AUTHORITY')) +
          DSN(CICSRS5.WUICERT)

 RACDCERT ID(CICSTS) GENCERT +
```

```
SUBJECTSDN(CN('WTSC66OE.ITSO.IBM.COM - DEFAULT') +                    +
           T ('CPSM WEB USER INTERFACE SERVER - DEFAULT') +
           OU('REDBOOK') +
           O ('ITSO') +
           L ('DURHAM')+
           SP('NORTH CAROLINA')+
           C ('USA')) +
NOTBEFORE(DATE(2005-01-01) TIME(00:00:00))+
NOTAFTER (DATE(2014-12-31) TIME(23:59:59))+
SIGNWITH (CERTAUTH LABEL('CPSM-WUI-CERT-AUTHORITY')) +
WITHLABEL('CPSM-DEFAULT-CERTIFICATE') +
SIZE(768)

RACDCERT ID(CICSTS) EXPORT(LABEL('CPSM-DEFAULT-CERTIFICATE'))+
         DSN(CICSRS5.DEFPORT)

RACDCERT ID(CICSTS) GENCERT +
SUBJECTSDN(CN('WTSC66OE.ITSO.IBM.COM - WUI') +
           T ('CPSM WEB USER INTERFACE SERVER - WUI CERT') +
           OU('REDBOOK') +
           O ('ITSO') +
           L ('DURHAM')+
           SP('NORTH CAROLINA')+
           C ('USA')) +
NOTBEFORE(DATE(2005-01-01) TIME(00:00:00))+
NOTAFTER (DATE(2014-12-31) TIME(23:59:59))+
SIGNWITH (CERTAUTH LABEL('CPSM-WUI-CERT-AUTHORITY')) +
WITHLABEL('CPSM-WUI-CERTIFICATE') +
SIZE(768)

RACDCERT ID(CICSTS) EXPORT(LABEL('CPSM-WUI-CERTIFICATE'))+
         DSN(CICSRS5.WUIPORT)

RACDCERT ID(CICSTS) GENCERT +
SUBJECTSDN(CN('WTSC66OE.ITSO.IBM.COM - CORBA') +
           T ('CPSM WEB USER INTERFACE SERVER - CORBA CERT') +
           OU('REDBOOK') +
           O ('ITSO') +
           L ('DURHAM')+
           SP('NORTH CAROLINA')+
           C ('USA')) +
NOTBEFORE(DATE(2005-01-01) TIME(00:00:00))+
NOTAFTER (DATE(2014-12-31) TIME(23:59:59))+
SIGNWITH (CERTAUTH LABEL('CPSM-WUI-CERT-AUTHORITY')) +
WITHLABEL('CPSM-CORBA-CERTIFICATE') +
SIZE(768)

RACDCERT ID(CICSTS) EXPORT(LABEL('CPSM-CORBA-CERTIFICATE'))+
         DSN(CICSRS5.CORBPORT)
```

```
RACDCERT ID(CICSTS) ADDRING(WEBSERVER.SCSCPJA2)

RACDCERT ID(CICSTS) +
         CONNECT(RING(WEBSERVER.SCSCPJA2) +
                  LABEL('Verisign Class 1 Primary CA') +
                  CERTAUTH +
                  USAGE(CERTAUTH))

RACDCERT ID(CICSTS) +
         CONNECT(RING(WEBSERVER.SCSCPJA2) +
                  LABEL('Verisign Class 2 Primary CA') +
                  CERTAUTH +
                  USAGE(CERTAUTH))

RACDCERT ID(CICSTS) +
         CONNECT(RING(WEBSERVER.SCSCPJA2) +
                  LABEL('IBM World Registry CA') +
                  CERTAUTH +
                  USAGE(CERTAUTH))

RACDCERT ID(CICSTS) +
         CONNECT(RING(WEBSERVER.SCSCPJA2) +
                  LABEL('CPSM-WUI-CERT-AUTHORITY') +
                  CERTAUTH +
                  USAGE(CERTAUTH))

RACDCERT ID(CICSTS) CONNECT(RING(WEBSERVER.SCSCPJA2) +
                     LABEL('CPSM-WUI-CERTIFICATE'))
RACDCERT ID(CICSTS) CONNECT(RING(WEBSERVER.SCSCPJA2) +
                     LABEL('CPSM-CORBA-CERTIFICATE'))
RACDCERT ID(CICSTS) CONNECT(RING(WEBSERVER.SCSCPJA2) +
                     LABEL('CPSM-DEFAULT-CERTIFICATE') DEFAULT)

RACDCERT ID(CICSTS) LIST
RACDCERT ID(CICSTS) LISTRING(WEBSERVER.SCSCPJA2)
/*
//
```

The certificates and the key ring's contents are shown in Example 8-7.

Example 8-7 Contents of key ring

```
RACDCERT ID(CICSTS) LIST

Digital certificate information for user CICSTS:

  Label: CPSM-DEFAULT-CERTIFICATE
```

```
Certificate ID: 2QbDycPi4+LD1+LUYMTFxsHkO+Ngw8XZ48nGycPB48VA
Status: TRUST
Start Date: 2005/01/01 00:00:00
End Date:   2014/12/31 23:59:59
Serial Number:
     >01<
Issuer's Name:
     >CN=ITSO CPSM WUI REDBOOK CERTIFICATION AUTHORITY.OU=ITSO.O=IBM.L=DURH<
     >AM.SP=NORTH CAROLINA.C=USA<
Subject's Name:
     >CN=WTSC66OE.ITSO.IBM.COM - DEFAULT.T=CPSM WEB USER INTERFACE SERVER -<
     > DEFAULT.OU=REDBOOK.O=ITSO.L=DURHAM.SP=NORTH CAROLINA.C=USA<
Private Key Type: Non-ICSF
Private Key Size: 768
Ring Associations:
  Ring Owner: CICSTS
  Ring:
     >WEBSERVER.SCSCPJA2<

Label: CPSM-WUI-CERTIFICATE
Certificate ID: 2QbDycPi4+LD1+LUYObkyWDDxdnjycbJw8HjxUBA
Status: TRUST
Start Date: 2005/01/01 00:00:00
End Date:   2014/12/31 23:59:59
Serial Number:
     >02<
Issuer's Name:
     >CN=ITSO CPSM WUI REDBOOK CERTIFICATION AUTHORITY.OU=ITSO.O=IBM.L=DURH<
     >AM.SP=NORTH CAROLINA.C=USA<
Subject's Name:
     >CN=WTSC66OE.ITSO.IBM.COM - WUI.T=CPSM WEB USER INTERFACE SERVER - WUI<
     > CERT.OU=REDBOOK.O=ITSO.L=DURHAM.SP=NORTH CAROLINA.C=USA<
Private Key Type: Non-ICSF
Private Key Size: 768
Ring Associations:
  Ring Owner: CICSTS
  Ring:
     >WEBSERVER.SCSCPJA2<

Label: CPSM-CORBA-CERTIFICATE
Certificate ID: 2QbDycPi4+LD1+LUYMPW2cLBYMPF2ePJxsnDwePF
Status: TRUST
Start Date: 2005/01/01 00:00:00
End Date:   2014/12/31 23:59:59
Serial Number:
     >03<
Issuer's Name:
     >CN=ITSO CPSM WUI REDBOOK CERTIFICATION AUTHORITY.OU=ITSO.O=IBM.L=DURH<
     >AM.SP=NORTH CAROLINA.C=USA<
```

```
  Subject's Name:
       >CN=WTSC66OE.ITSO.IBM.COM - CORBA.T=CPSM WEB USER INTERFACE SERVER - C<
       >ORBA CERT.OU=REDBOOK.O=ITSO.L=DURHAM.SP=NORTH CAROLINA.C=USA<
  Private Key Type: Non-ICSF
  Private Key Size: 768
  Ring Associations:
    Ring Owner: CICSTS
    Ring:
       >WEBSERVER.SCSCPJA2<

READY
 RACDCERT ID(CICSTS) LISTRING(WEBSERVER.SCSCPJA2)

Digital ring information for user CICSTS:

  Ring:
       >WEBSERVER.SCSCPJA2<
  Certificate Label Name              Cert Owner     USAGE      DEFAULT
  --------------------------------    ------------   --------   -------
  Verisign Class 1 Primary CA         CERTAUTH       CERTAUTH     NO
  Verisign Class 2 Primary CA         CERTAUTH       CERTAUTH     NO
  IBM World Registry CA               CERTAUTH       CERTAUTH     NO
  CPSM-WUI-CERT-AUTHORITY             CERTAUTH       CERTAUTH     NO
  CPSM-WUI-CERTIFICATE                ID(CICSTS)     PERSONAL     NO
  CPSM-CORBA-CERTIFICATE              ID(CICSTS)     PERSONAL     NO
  CPSM-DEFAULT-CERTIFICATE            ID(CICSTS)     PERSONAL     YES

READY
END
```

We created a key ring named WEBSERVER.SCSCPJA2 containing three certificates: CPSM-WUI-CERTIFICATE, CPSM-CORBA-CERTIFICATE, and CPSM-DEFAULT-CERTIFICATE. The first may to be named in TCPIPSERVICEs with PROTOCOL(HTTP), the second may be used in CORBASERVER definitions, and the third is used for all TCPIPSERVICEs and CORBASERVER definitions that do not name a certificate.

Finally, we must also ensure that the CICS region user ID has read access to resources IRR.DIGTCERT.LISTRING and IRR.DIGTCERT.* in class FACILITY to be able to access the key ring.

Example 8-8 Authorizing the CICS region user ID

```
PERMIT IRR.DIGTCERT.LISTRING CLASS(FACILITY) ID(CICSTS) ACCESS(READ)
PERMIT IRR.DIGTCERT.* CLASS(FACILITY) ID(CICSTS) ACCESS(READ)
SETROPTS RACLIST(FACILITY) REFRESH
```

8.4.3 Set WUI TCP/IP related system parameters

In order to use SSL to establish a secure session with the WUI server we must define the attributes for a TCPIPSERVICE that identify the port that will be used for the SSL connection and the certificate that will be presented by the server. The contents of the server's EYUWUI file are shown in Example 8-9.

Example 8-9 EYUWUI parms supporting SSL sessions

```
TCPIPHOSTNAME(wtsc66oe.itso.ibm.com)
TCPIPport(9001)
TCPIPSSL(YES)
TCPIPSSLCERT(CPSM-WUI-CERTIFICATE)
DEFAULTCMASCTXT(SCSCCMAS)
DEFAULTCONTEXT(SC66PLEX)
DEFAULTMENU(EYUSTARTMENU)
DEFAULTNAVIGATE(EYUSTARTNAVIGATE)
DEFAULTSCOPE(SC66PLEX)
INACTIVETIMEOUT(480)
```

Restriction: The label of the chosen X.509 certificate must not contain lower-case characters. Parameter names and values specified in the EYUWUI file are folded to upper-case before processing.

The EYUWUI TCPIPSERVICE used by the WUI server is created during server initialization from parameters provided in the EYUWUI file.

Note: Regardless of the TCPIPSERVICE used to initiate the session, the WUI server always responds through the EYUWUI TCPIPSERVICE.

8.4.4 Start the WUI server

We need to update the SIT parms for the WUI server to specify the level of encryption that we will support and identify the key ring that contains the digital certificates that we created in 8.4.2, "Build the key ring" on page 405.

Example 8-10 SIT parms to enable SSL sessions

```
ENCRYPTION=STRONG,                Encryption level supported
KEYRING=WEBSERVER.SCSCPJA2        Key ring name
```

Specifying ENCRYPTION=STRONG ensures that our WUI server uses the strongest encryption mode supported by the client. There are more parameters related to managing SSL sessions that may be specified, but we can accept the

default values for the purposes of this exercise. See *CICS Transaction Server for z/OS RACF Security Guide, Version 3 Release 2,* GC34-6835, for further details.

The WUI server should be started cold after making all the parameter changes described above to ensure that the EYUWUI TCPIPSERVICE definition is installed.

8.4.5 Connect to the WUI server using SSL

Before restarting the WUI server to activate SSL, the URL for the WUI server specifies protocol http: (Figure 8-6). After the server is restarted and the secure TCPIPSERVICE has been installed, the URL must specify protocol https: (Figure 8-7 on page 412).

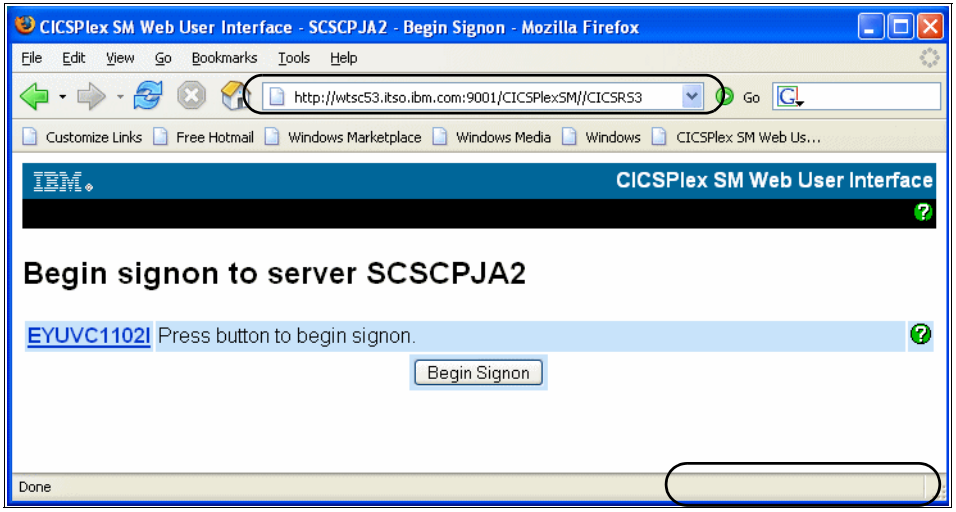

Figure 8-6 Non-SSL Begin signon window

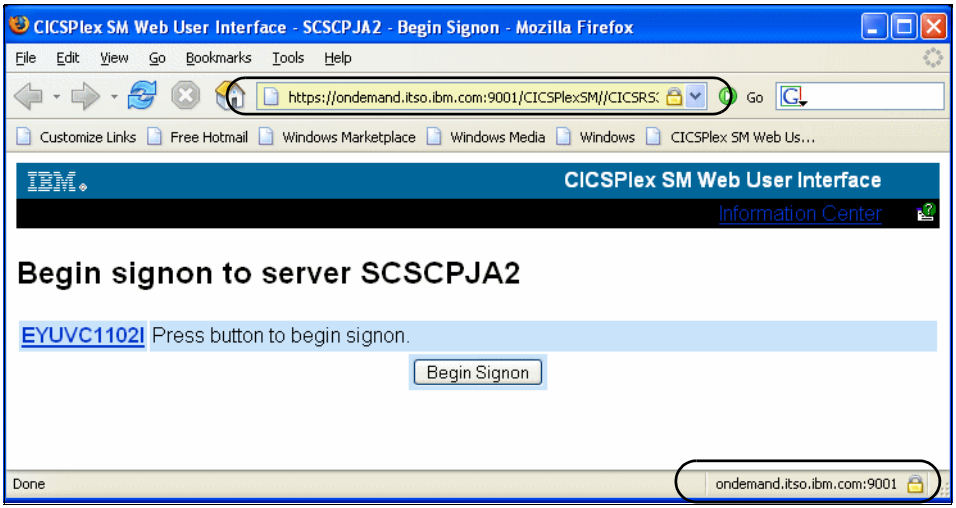

Figure 8-7 SSL Begin signon window

Click the **Begin Signon** button to log on to the WUI server.

Certificate validation

The first time you sign on to the WUI server using protocol https:, you might receive a warning about problems with the certificate presented by the WUI server. You can click the **Yes** button to accept the certificate for the duration of the session or the **View Certificate** button to review the certificate (Figure 8-8).

Figure 8-8 Security Alert dialog box

Clicking the **View Certificate** button displays a dialog box with further information about the certificate and the issuing authority.

Note: The reason for the above alert is a self-signed certificate. This may happen more than once.

You may click the **Install Certificate** button to install the certificate in the browser's certificate cache (Figure 8-9). Installing the certificate in the browser's cache ensures that the issuing authority will be accepted in the future. Click the **OK** button to return to the Security Alert dialog box (Figure 8-8 on page 413).

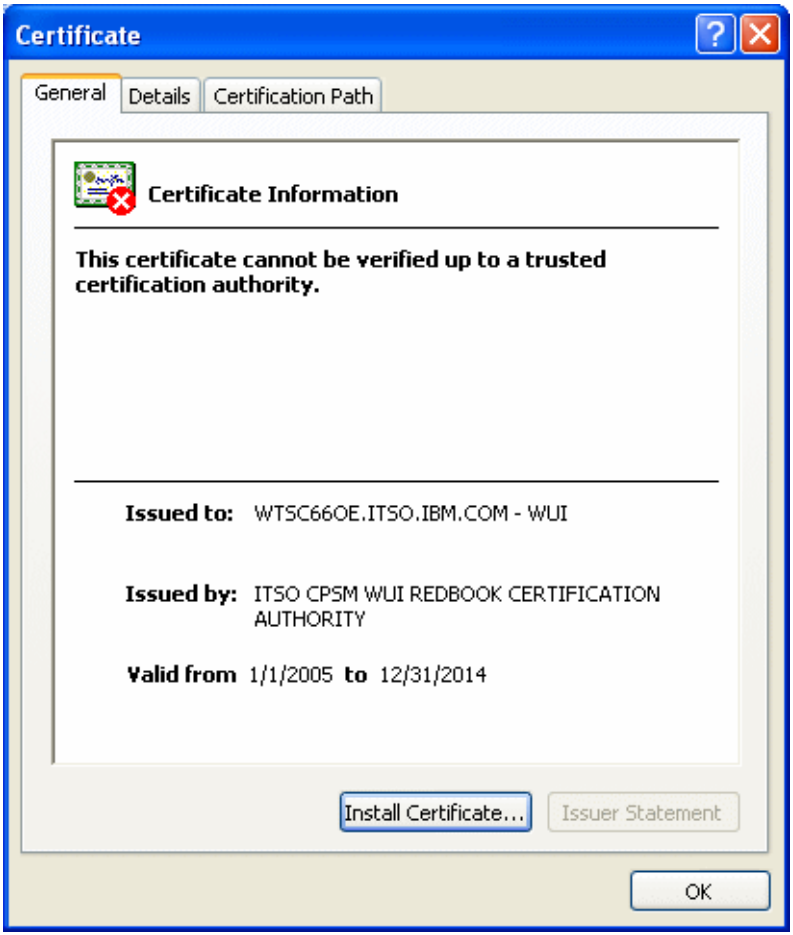

Figure 8-9 Certificate Information

Troubleshoot

There are a number of problems that can occur when enabling CICS security in a WUI server and setting up a WUI server supporting SSL sessions. We examine some of the common failures in this section.

1. The server region terminates immediately after the message:

```
DFHAM4889 E SCSCPJA2 Install of TCPIPSERVICE EYUWUI failed because
CERTIFICATE SCSCPJA2-WEB-SERVER is invalid.
```

Ensure that the label of the certificate identified in the TCPIPSSLCERT() parameter is not longer than 32 characters and does not contain any lower-case characters.

2. The following messages appear in the WUI server's job log:

```
DFHPA1909 SCSCPJA2 DATA WEBSERVER.SCSCPJA2 IS INVALID FOR KEYWORD KEYRING=.
RESPECIFY KEYWORD AND DATA.
DFHAM4905 E SCSCPJA2 Install failed for EYUWUI. Option SSL(YES) is not
available on this system.
```

   Ensure that the CICS region user ID and not the default user ID was used to create the key ring and certificates. Ensure that the region user ID has been granted READ access to resources IRR.DIGTCERT.LISTRING and IRR.DIGTCERT.* in class FACILITY.

3. The following message appears in the CMAS job log:

```
EYUTS0001I SCSCCMAS Topology Connect for SCSCPJA2 Initiated -
APPLID(SCSCPJA2) CICSplex(SC66PLEX)
EYUCR0007E SCSCCMAS Security mismatch between CMAS  SCSCCMAS  and MAS
SCSCPJA2 . Connection terminating.
EYUTS0002E SCSCCMAS Topology Connect for SCSCPJA2 Failed    -
APPLID(SCSCPJA2) CICSplex(SC66PLEX)
```

   If the MASPLTWAIT(YES) parameter was specified in the MAS EYUPARM file, the CPSM PLT program waits for the interval specified or defaulted for the MASINITTIME() parameter, then terminates to allow CICS initialization to complete.

   MAS (WUI server) SCSCPJA2 was started with CICS security enabled (SEC=YES in the SIT parameters). CMAS SCSCCMAS was started with SEC(NO) specified in the EYUPARM file. CICSPlex SM does not allow a secure MAS to connect to a CMAS that does not have CICSPlex SM security active.

4. When signing on to the WUI in a browser, you receive the following message:

```
EYUVC1013E Unable to create User environment. Failed to start user task.
```

   And the following message appears in the EYULOG:

```
EYUVS0031E SCSCPJA2 Signon failed. Unable to start task for User (CICSRS2).
(CICS information: RESP(70) RESP2(9))
```

   This means that CICS surrogate user security is active in the WUI server but that the user ID under which the global server task runs does not have READ access to the resource wui-user_ID.DFHSTART in class SURROGAT. See Example 8-5 on page 404.

Note: The global server task is the COVG tranid. Its user ID is inherited from the PLTPIUSER if the WUI is started via the CPSMCONN=WUI sit option or PLT. Otherwise, the user ID is the one that issued the COVC START transaction.

5. When attempting to access a view in the WUI, you receive the following message:

   ```
   EYUVC1220E CICSPlex SM API Command (GET) failed. (Notpermit, Usrid).
   ```

   You are not authorized to access the CICSPlex SM resource profile securing the data that you have attempted to display. If a profile exists and you do not have sufficient authority, then message ICH408I in the CMAS job log identifies the resource. If no message appears, it means that no profile exists for the resource in question. You should be able to identify the name of the resource from the information given in Table 8-1 on page 395 and Table 8-2 on page 396.

8.5 Referenced publications

For more information refer to the following resources:

- *CICS Transaction Server for z/OS Installation Guide, Version 3 Release 2,* GC34-6812
- *CICS Transaction Server for z/OS RACF Security Guide, Version 3 Release 2,* GC34-6835
- *CICS Transaction Server for z/OS CICSPlex SM Web User Interface Guide, Version 3 Release 2,* GC34-6841
- *CICS Transaction Server for z/OS CICSPlex SM Problem Determination, Version 3 Release 2,* GC34-6852

A

Additional material

This redbook refers to additional material that can be downloaded from the Internet as described below.

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The additional Web material that accompanies this redbook includes the following files:

File name	*Description*
SG246793.zip	Unloaded VEWSET and MENU definitions

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System requirements for downloading the Web material

The following system configuration is recommended:

Hard disk space	2 MB minimum
Operating System	Windows®

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Related publications

The publications listed in this section are considered particularly suitable for a more detailed discussion of the topics covered in this redbook.

IBM Redbooks

For information about ordering these publications, see “How to get IBM Redbooks” on page 420. Note that some of the documents referenced here may be available in softcopy only.

- *IBM CICS Performance Analyzer V1.2,* SG24-6882
- *DB2 for z/OS and OS/390 Version 7 Selected Performance Topics,* SG24-6894

Other publications

These publications are also relevant as further information sources:

- *CICS Transaction Server for z/OS CICSPlex SM Concepts and Planning, Version 3 Release 2,* SC34-6839
- *Program Directory for CICS Transaction Server for z/OS, V3.2.0,* GI13-0515
- *CICS Transaction Server for z/OS Migration from CICS TS Version 3.1, Version 3 Release 2,* GC34-6858
- *CICS Transaction Server for z/OS Installation Guide, Version 3 Release 2,* GC34-6812
- *CICS Transaction Server for z/OS CICSPlex SM Application Programming Guide, Version 3 Release 2,* SC34-6848
- *CICS Transaction Server for z/OS CICSPlex SM Application Programming Reference, Version 3 Release 2,* SC34-6849
- *CICS Transaction Server for z/OS CICSPlex SM Managing Workloads, Version 3 Release 2,* SC34-6845
- *CICS Transaction Server for z/OS DB/2 Guide, Version 3 Release 2,* SC34-6837
- *CICS Transaction Server for z/OS CICSPlex SM Web User Interface Guide, Version 3 Release 2,* GC34-6841

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- *CICS Transaction Server for z/OS RACF Security Guide, Version 3 Release 2,* GC34-6835
- *CICS Transaction Server for z/OS CICSPlex SM Problem Determination, Version 3 Release 2,* GC34-6852
- *CICS Transaction Server for z/OS CICSPlex SM Managing Resource Usage, Version 3 Release 2,* SC34-6846

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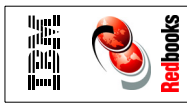

CICS System Manager in the WUI as the Principle Management Interface

CICS System Manager in the WUI as the Principle Management Interface

Installation and overview of CICSPlex SM V3.2

Migration to CICSPlex SM V3.2

Using the CICSPlex SM WUI

This IBM® Redbooks® publication reviews the CICSPlex® SM Web User Interface (WUI). We first give an overview of CICSPlex SM and the WUI. In Chapter 2, “CICSPlex SM installation” on page 13, we show an installation for first-time users of CICSPlex SM and the WUI for CICSPlex SM V3.2. Chapter 3, “CICSPlex SM migration” on page 55, concentrates on how to migrate to CICSPlex SM V3.2. We discuss the migration best practices and show a migration step-by-step.

This book also reviews the default menus delivered with the CICSPlex SM WUI and describes scenarios where these views could be used. We also discuss view modification and customization, focusing on such things as favorites and how to use the view editor.

This book contains a chapter on problem determination. In that chapter we discuss problems that may be discovered and fixed using the CICSPlex SM WUI. Typical problems that we concentrate on are problems with files and in storage, as well as usage of the history facility. In the final few chapters of this book we look at CICSPlex SM security and describe how to implement SSL in the CICSPlex SM WUI. The last chapter of this book gives the reader some hints and tips on problems encountered, and considerations when using the CICSPlex SM WUI.

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